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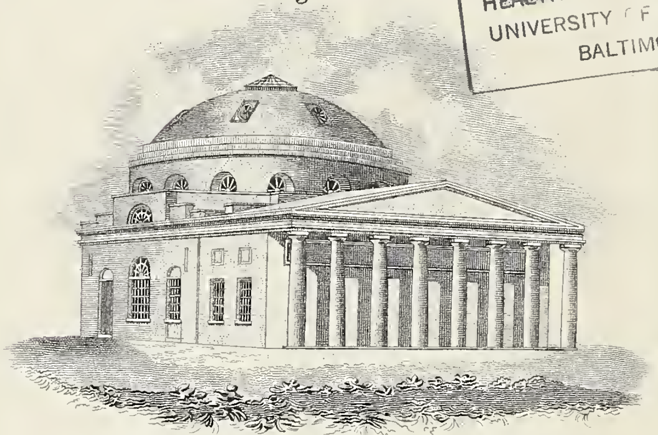

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Rheumatoid Arthritis

Experiences with Hydrocortisone (Free Alcohol) and Hydrocortisone Acetate

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SUMMARY

• *Recent experimental evidence suggests that hydrocortisone (Kendall's Compound F) is probably the principal glycogenic steroid secreted by the adrenal cortex and that under conditions of stress it may participate more than cortisone in physiologic reactions. Laboratory studies indicate that hydrocortisone has greater physiologic activity, milligram for milligram, than cortisone and with certain assays its potency is twice as great.*

Two forms of hydrocortisone, the free alcohol preparation and the acetate, were given systemically to patients with rheumatoid arthritis and were observed to possess significant differences in ability to suppress the disease manifestations.

When administered orally in large initial doses, hydrocortisone (free alcohol) appeared to produce greater suppressive effects, milligram for milligram, than either hydrocortisone acetate or cortisone acetate. Comparisons of potency made by determining maintenance dosage requirements for equivalent degrees of clinical control in the same patients indicated that the effectiveness of hydrocortisone (free alcohol) is more than 50 per cent greater than that of either the free or acetated forms of cortisone and approximately twice as great as that of hydrocortisone acetate.

Certain observations suggested that the greater antirheumatic activity of hydrocortisone (free alcohol) is not accompanied by a correspondingly greater tendency toward endocrine complications. If more extensive future investigations support this observation, hydrocortisone (free alcohol), by producing equally efficient results with smaller doses, may prove superior to cortisone as a therapeutic agent.

Intra-articular injections of hydrocortisone acetate appear to have only a limited place in the management of rheumatoid arthritis but may be used for temporary relief under certain conditions. In preliminary studies by the author it was noted that whereas improvement resulted in 80 per cent of the treated joints, the improvement was graded as pronounced or very pronounced in only one-half of the joints so injected. In almost all instances the benefits derived were quite temporary. Results observed in treatment of osteoarthritic joints by this method were decidedly poorer than in rheumatoid arthritis.

It is now generally conceded that cortisone exerts a beneficial influence in rheumatoid arthritis by suppressing, through some yet unknown mechanism, the inflammatory reactions of the tissues involved. Its effects are not curative and its administration probably does not alter the basic pattern of the disease. The suppressive action usually lasts only for as long as treatment is given, and if improvement is to be sustained cortisone must be administered more or less continuously for an indefinite period. Prolonged

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therapy with cortisone, over months or years, is beset with many problems and, with present methods of administration at least, satisfactory improvement is not maintained in all patients with rheumatoid arthritis. In a recent analysis of results from uninterrupted treatment for periods ranging from six to fifteen months it was noted that adequate degrees of control were provided in approximately two-thirds of patients.[1] In general, the ability to uphold satisfactory improvement for long periods varied inversely with the severity or activity of the rheumatoid arthritis; adequate improvement was maintained in approximately 90 per cent of mild or moderate cases, 70 per cent of moderately severe cases, and 50 per cent of severe cases. The chief obstacle to better results was the development of adverse hormonal reactions from the drug. Results were poorer in patients whose disease was severe because they required continued large or relatively large amounts of cortisone which often could not be tolerated; efficient doses frequently had to be reduced with detriment to clinical results.

Obviously a hormone with equal therapeutic efficiency and less tendency for endocrine complications, or one with the same liabilities, milligram for milligram, but with greater antirheumatic activity, would have practical advantages as a treatment agent. A long list of steroids, many with close chemical structural similarities to cortisone, have been screened by critical investigators. So far only one, hydrocortisone (Kendall's Compound F), has proved to possess potent anti-inflammatory and anti-allergic properties. Supplies of this substance, especially in its free form, have been extremely restricted and only limited laboratory and clinical investigations have been permitted. During the past year the author has studied the antirheumatic effects of the hormone, in both its free and acetated forms, and has endeavored to compare its effects to those from cortisone (free alcohol) and cortisone acetate. A resume of the study is included herein.

Hydrocortisone (17-hydroxycorticosterone) differs from cortisone in only one structural detail—there is a hydroxyl radical instead of a ketone group placed at the eleventh carbon position in the steroid nucleus. The pure hormone, hydrocortisone (free alcohol), must be carefully distinguished from its ester, hydrocortisone acetate, for the two preparations have substantial differences in potency when administered systemically. They also have pronounced differences in solubility; hydrocortisone (free alcohol) is much more soluble in a number of media, including water (28 times), synovial fluid (6 times), plasma (35 times), and egg albumin (36 times).[19]

Until very recently the production of hydrocortisone (free alcohol) has depended on two complicated and expensive methods of biosynthesis. The first involves the perfusion of bovine adrenal glands in vitro with media containing Reichstein's Compound S (11-desoxy-17-hydrocorticosterone). This substance possesses no anti-inflammatory or anti-allergic properties but during perfusion the gland places a hydroxyl radical at the C11 position of the steroid nucleus, changing it to the active hormone, hydrocortisone. The second process involves the incubation of Reichstein's Compound S with macerated adrenal tissue; during incubation the steroid is changed by adrenal cortical enzymes to hydrocortisone which is then extracted from the mixture. Hydrocortisone (free alcohol) is now also prepared by a chemical method which entails the changing of cortisone acetate to hydrocortisone acetate and then de-esterifying the latter to the free hormone. Through this method greater quantities of the preparation may be expected for clinical investigation, although there is none yet available on the commercial market. Hydrocortisone acetate is produced by partial chemical synthesis and is now marketed as a suspension suitable for local administration.

Results from several experimental procedures indicate that hydrocortisone may be the principal glycogenic corticoid elaborated by the adrenal cortex and that it may participate more than cortisone in physiologic reactions, at least under conditions of stress. Some of the evidence is as follows: (1) When corticotropin (ACTH) is administered to humans, large quantities of hydrocortisone and only traces of cortisone are recovered in the urine;[14] (2) when corticotropin is added to media perfused through isolated beef adrenal glands, the production of hydrocortisone and corticosterone (Kendall's Compound B) is greatly increased but other steroids, including cortisone, are secreted in much smaller quantities;[12] (3) isolated adrenal glands will transform Reichstein's Compound S to hydrocortisone on perfusion, but no substance yet perfused has yielded cortisone[8, 16]—a fact which has led some investigators to speculate that cortisone may be a metabolite of hydrocortisone, rather than a primary secretion product; (4) hydrocortisone, not cortisone, is the chief corticoid found in the urine of patients with hyperfunctioning adrenal cortical tumors.[5, 12]

Carefully conducted laboratory studies have consistently demonstrated that, milligram for milligram, non-esterified hydrocortisone has greater physiologic activity than cortisone: (1) The potency of hydrocortisone is approximately twice as great on the basis of muscle work tests, assays of liver glycogen, and ability to cause regressive changes in the thymus, adrenal, and other glands;[10, 11, 15] (2) approximately one-half as much hydrocortisone as cortisone is needed to promote equivalent eosinopenic responses;[7, 17, 18] and (3) hydrocortisone is more effective in stunting growth of chick embryos.[13]

EFFECTS FROM INITIAL SUPPRESSIVE DOSES GIVEN ORALLY

Hydrocortisone (free alcohol). To date ten patients with rheumatoid arthritis of the peripheral type, who had not previously received hormonal therapy for arthritis, have been given hydrocortisone (free alcohol) by mouth as initial therapy.* Because supplies of the material were limited, six of the ten patients received somewhat smaller doses on the first and second days of administration than would have been used ordinarily with cortisone acetate in cases of corresponding severity. In most instances suppressive amounts of the hormone consisted of 100 mg. a day, given in four divided doses.

Results from initial suppressive therapy with hydrocortisone (free alcohol) in five of the patients have been reported in detail elsewhere.[2] In general, the pattern of improvement was similar to that which occurs with cortisone acetate. However, the onset of improvement was more strikingly and uniformly rapid with hydrocortisone (free alcohol) and symptoms such as aching, stiffness, and joint tenderness began to abate within three to ten hours following the initial dose. Subsequent improvement usually progressed at a more rapid rate than with cortisone acetate and was more nearly complete within short periods. In the ten patients adequate degrees of improvement (pronounced or very pronounced—more than 75 per cent) resulted within four to fifteen days. Correction of erythrocyte sedimentation rate was consistently rapid and, in contrast to cortisone acetate, the reduction in rate closely followed the clinical improvement. Corrections in sedimentation rate (Westergren method) such as the following were recorded: from 53 mm. to 10 mm. in 7 days; from 61 mm. to 11 mm. in 10 days; from 48 mm. to 16 mm. in 6 days; and from 119 mm. to 39 mm. in 15 days.

From these observations it appeared that hydrocortisone (free alcohol) was substantially more effective than cortisone acetate when the compounds were given by mouth in similar milligram doses. Relative potencies of the two hormones could not be estimated on the basis of response to suppressive doses in different patients, however, and direct determinations of differences in dosage requirements were subsequently made. This was done by comparing the maintenance amounts of the hormone needed in the same patient for similar degrees of rheumatic control.

Hydrocortisone acetate. The acetate ester of hydrocortisone was administered orally as initial treatment to eight patients with peripheral rheumatoid arthritis.† The suppressive doses employed were identical to those customarily used for cortisone acetate. In contrast to the superior response noted with hydrocortisone (free alcohol), the effects from initial suppressive doses of hydrocortisone acetate were considered to be less than would be expected from cortisone acetate given in corresponding doses in six of the eight patients. The onset of subjective relief was less striking, the erythrocyte sedimentation rate was reduced slowly and unimpressively, and at the end of several days of treatment the overall subjective and objective improvement was inferior to that which should have resulted from similar amounts of cortisone acetate. In two patients the onset and course of improvement were judged as approximately the same as might have occurred with cortisone acetate. These observations indicated that with oral administration hydrocortisone acetate was, in general, less effective than cortisone acetate and was distinctly inferior to hydrocortisone (free alcohol).

COMPARISONS OF MAINTENANCE DOSAGE REQUIREMENTS

By transferring treatment of patients stabilized on maintenance doses of one compound directly to a second compound and comparing the dosages required for similar degrees of clinical improvement, it is possible to estimate differences in antirheumatic potency. It is recognized that assessments based on clinical evaluations alone are not truly quantitative but it is necessary to rely on them at present, for there are no bioassay methods with which to test rheumatic activity and it is not possible to produce rheumatoid arthritis in laboratory animals.

Care was taken not to make transfers from one preparation to another in rapid sequences and patients were stabilized on a given compound for two or more weeks before being transferred to the test preparation. When differences in dosage requirements were determined, the patients were routinely transferred back to the original preparation in order to cross-check the results. Attempts were made to compare the dosages needed to maintain pronounced (70 to 85 per cent) improvement, not complete inhibition of the disease; thus sufficient subjective and objective manifestations remained to permit changes in rheumatic response to be measured. Patients held under this degree of control are sensitive to small alterations in dosage, and changes of 10 mg. or 12.5 mg. a day are usually reflected symptomatically and often objectively.

Comparisons of requirements of hydrocortisone (free alcohol) and cortisone acetate. The maintenance doses needed to uphold similar degrees of clinical control were compared in fifteen patients. Dosage differences were clearly defined and in each

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*The hydrocortisone (free alcohol) used in this investigation was supplied by G. D. Searle & Co., Merck & Co., Inc., and the Upjohn Co.

† Hydrocortisone acetate was supplied by Merck & Co., Inc.

TABLE 1.—*Comparisons of Oral Maintenance Dosage Requirements: Based on Milligram Doses for Equivalent Improvement in Patients with Rheumatoid Arthritis.*

Preparations Compared	Number of Cases	Calculated dosage ratios	
		Range	Average
Hydrocortisone (free alcohol) to cortisone acetate	15	1:1.43 to 1:1.70	1:1.59
Cortisone acetate to hydrocortisone acetate	13	1:1 to 1:1.64	1:1.35
Hydrocortisone (free alcohol) to hydrocortisone acetate	9	1:1.75 to 1:2.19	1:1.97
Cortisone acetate to cortisone (free alcohol)	17	1:08 to 1:1.2	1:0.95

patient smaller amounts of hydrocortisone (free alcohol) were required to provide equivalent improvement in the rheumatic manifestations. Dosage ratios of hydrocortisone (free alcohol) to cortisone acetate ranged from 1:1.43 to 1:1.7, with an average ratio for the group of 1:1.59 (Table 1). Results of comparisons made in ten of these patients were contained in a previous report[3] which gave the average ratio as 1:1.56. Thus the average dosage differences between the two hormones changed but little with enlargement of the study. The results imply that the antirheumatic potency of hydrocortisone (free alcohol) is, milligram for milligram, more than 50 per cent greater than that of cortisone acetate when the substances are administered by mouth.

Comparisons of requirements of cortisone acetate and hydrocortisone acetate. When the maintenance requirements of these two substances were tested on the same patients, hydrocortisone acetate was found to be less effective than cortisone acetate in twelve of thirteen patients studied. Dosage differences were not so well defined as with hydrocortisone (free alcohol) and two sets of comparisons were made in most cases. Dosage ratios of cortisone acetate to hydrocortisone acetate varied from 1:1 to 1:1.64 with an average of 1:1.35 for the group (Table 1).

Comparisons of requirements of hydrocortisone (free alcohol) and hydrocortisone acetate. These two compounds were directly compared in nine patients, and in each patient hydrocortisone (free alcohol) was found to be decidedly superior to hydrocortisone acetate. As reported elsewhere[3] differences in requirements were fairly uniform: the dosage ratios of hydrocortisone (free alcohol) to hydrocortisone acetate varied from 1:1.75 to 1:2.19 in the nine cases, with an average for the group of 1:1.97. These figures indicate that hydrocortisone (free alcohol) is, milligram for milligram, approximately twice as effective with oral administration.

Comparisons of requirements of cortisone (free alcohol) and cortisone acetate. The maintenance requirements for the free and acetated forms of cortisone were compared in a total of seventeen patients.* Significant differences in potency could not be demonstrated, and except for minor deviations in four patients, maintenance dosages for the two preparations were interchangeable.

Summary of results from maintenance dosage comparisons. Results derived from these studies imply that hydrocortisone (free alcohol), when administered orally, produces a greater antirheumatic effect than cortisone acetate, cortisone (free alcohol) and hydrocortisone acetate. The effectiveness of hydrocortisone (free alcohol) appears to be more than 50 per cent greater, milligram for milligram, than that of cortisone acetate and about twice as great as that of hydrocortisone acetate. Cortisone acetate and cortisone (free alcohol) seem to be equally effective.

Adverse effects from hydrocortisone (free alcohol). It is probable that endocrine complications of the same qualitative order as with cortisone acetate will develop from hydrocortisone (free alcohol) if large enough doses of the hormone are given systemically for prolonged periods. However, it was not possible to compare the incidence of undesirable effects from the two hormones in the present study because hydrocortisone was administered to only a few patients and for short periods. In two of the ten patients treated with initial suppressive (100 mg.) doses, signs of hormone excess developed during the administration. Slight facial "mooning" was noted in one patient after ten days of treatment, and in the other patient puffiness of the face and moderate edema of the lower legs developed after eight days. These signs promptly disappeared when the dosage of the hormone was lowered. Because studies in animals indicate that hydrocortisone exerts a greater influence on carbohydrate metabolism than cortisone, glucose tolerance determinations were made before, after, and at intervals during treatment, but with the doses employed the carbohydrate metabolism did not deviate from normal in any case.

Observations made while comparing maintenance requirements of hydrocortisone (free alcohol) and cortisone acetate suggested that effective therapeutic doses of hydrocortisone (free alcohol) might be accompanied by fewer endocrine complications. Comparisons were made by transferring patients stabilized for long periods (three to twenty-six months) on maintenance doses of cortisone acetate directly to hydrocortisone (free alcohol). Before transfer, seven of the fifteen patients had signs of cortisone excess. In six of the seven, slight to moderate edema that was present disappeared entirely when hydrocortisone (free alcohol) therapy was instituted in smaller but equally effective doses. Facial "mooning" was present beforehand in three patients, and it became less noticeable in two and receded completely in the other.

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*Merck & Co., Inc., supplied cortisone acetate, and the Upjohn Co. supplied cortisone (free alcohol).

The lessening of adverse reactions was observed repeatedly in three patients. The most striking example occurred in a 62-year-old man with severe rheumatoid arthritis and coexisting coronary sclerosis and pulmonary emphysema. In this patient maintenance doses of cortisone acetate ranging from 112.5 mg. to 125 mg. a day were needed for satisfactory improvement of the arthritis, whereas hydrocortisone (free alcohol) in total daily amounts of 70 or 75 mg. upheld as good or better rheumatic control. During most of a nine-month period he was maintained without complications on hydrocortisone (free alcohol) but on three occasions shortages of material made it necessary to revert to cortisone acetate administration. On each of those occasions. pronounced retention of salt and water and signs of cardiac decompensation developed, which, in turn, promptly disappeared with the resumption of hydrocortisone (free alcohol) therapy. In a second patient edema alternately appeared and receded, depending on whether cortisone acetate or hydrocortisone (free alcohol) was being given. The third patient had increased body weight, mooning of the face, and edema while being maintained on cortisone acetate, but these signs abated following each transfer to hydrocortisone.

Such observations have led to the tentative opinion that the greater antirheumatic activity of hydrocortisone (free alcohol) may not be accompanied by a correspondingly greater tendency to produce endocrine complications. Should this opinion be substantiated by more extensive investigations in the future, this hormone, by producing equally efficient results with smaller milligram doses, may prove superior to cortisone acetate as a therapeutic agent.

EFFECTS FROM HYDROCORTISONE ACETATE INJECTED INTRA-ARTICULARLY

Recently Hollander and co-workers[9] reported that hydrocortisone acetate injected directly into an inflamed joint produced pronounced but temporary suppression of local manifestations such as pain, swelling, tenderness, and limitation of motion. Concomitantly the intra-articular temperature was reduced and the synovial fluid cell count was decreased. In each of 69 patients with rheumatoid arthritis treated by them, intra-articular injections of the hormone in one or more joints resulted in prompt local alleviation of symptoms and signs. The degree of improvement varied considerably, however, and the duration of benefit from an injection ranged from a few days to several weeks. Doses of 25 mg. were optimal in most instances but in a few severe cases somewhat larger amounts were employed. Injections were repeated as often as necessary to provide continued relief. Hydrocortisone (free alcohol) was found to have the same local effectiveness as hydrocortisone acetate but injections of cortisone acetate gave inferior results. Bunim[4] and Freyberg[6] have confirmed this discrepancy between hydrocortisone acetate and cortisone acetate with intra-articular administration.

Hydrocortisone acetate injected into osteoarthritic joints was reported by Hollander to produce striking symptomatic alleviation. In 36 of 37 knees treated, complete or nearly complete disappearance of symptoms and complete return of normal work tolerance were said to have resulted within 24 hours after the injection of 25 mg. of the hormone intra-articularly. The duration of relief in those cases was found to be several times as long as in cases of rheumatoid arthritis (usually three weeks or longer) and often persisted until the patient abused the affected joint.

Author's experience with intra-articular administration of hydrocortisone acetate. Twenty-nine patients—22 with rheumatoid arthritis and seven with osteoarthritis—were given intra-articular injections of hydrocortisone acetate. Injections were made twice or several times in a total of 50 joints, including 41 knees, four shoulders, four elbows, and one wrist. Doses of 50 mg. were given arbitrarily and no local anesthesia to the skin or into the joint was used in any case. All patients tolerated the local treatment well; no accentuations of joint disability were noted following the injections, and no complications, such as infection or hemorrhage, developed. In 26 of the 29 patients, no systemic benefits were noted, but three patients had a transient general lessening of symptoms in joints remote from the injected site.

Local improvement from the injections was graded as follows: none, slight (less than 25 per cent), moderate (25 to 50 per cent), pronounced (50 to 75 per cent), and very pronounced (75 to 100 per cent). In the rheumatoid arthritic joints such grading was based on combined estimates of subjective and objective improvement. In osteoarthritic joints the grading was based entirely on the subjective relief experienced.

The preliminary results with local treatment of rheumatoid arthritic joints with hydrocortisone acetate may be summarized as follows: Of 40 joints injected two or more times, improvement did not occur in 4, was slight in 4, moderate in 12, pronounced in 13, and very pronounced in 7. Some definite improvement resulted in 32 or 80 per cent of the joints, but the improvement was graded as pronounced or very pronounced in only 50 per cent of the joints. Alleviation of symptoms began at varying intervals following the injections, ranging from 15 minutes to 12 hours, but usually some relief was noticed within four to eight hours. In joints in which appreciable response occurred, there was usually lessening of local pain, tenderness, synovial effusion, and restriction of motion within the first 24 hours. The maximal improvement was variable in duration, lasting from one to 45 days, but the usual period was three to five days; thereafter the relief gradually waned and objective changes returned. Prolonged improvement of a knee joint was observed in each of two patients and was still continuing at the time of this report, having lasted for 32 and 57 days respectively. In no instance did articular manifestations relapse to a state worse than before injection.

Results in patients with osteoarthritis were decidedly poorer than in those with rheumatoid arthritis. Ten osteoarthritic joints—all knees—in seven patients were injected three or more times with hydrocortisone acetate. Improvement did not occur in four joints, was slight in one, moderate in four, pronounced in one. In the joints in which response occurred, the relief lasted for periods varying from 36 hours to 14 days. Only two of the seven patients obtained enough improvement so that they desired the injections to be continued.

From these preliminary observations it appears to the author that the intra-articular application of hydrocortisone acetate has only a limited place in the management of patients with rheumatoid arthritis. The procedure represents local therapy for a systemic disease and is not a substitute for systemic treatment. Obviously it would be impractical to inject all of the joints affected in patients with rheumatoid arthritis involving multiple peripheral joints; the beneficial effects are usually quite temporary, in no way curative, and repeated injections at frequent intervals are necessary to provide prolonged relief. Treatment of this type may be advantageously applied for temporary relief, however, under certain special circumstances: (1) when the articular manifestations of the disease are restricted to one or two joints; (2) when, in multiple arthritis, one or two joints are particularly resistant to systemic therapy; (3) when complications such as pregnancy, diabetes, pulmonary tuberculosis, or active peptic ulcer prevent the use of cortisone, corticotropin, or perhaps gold salts; (4) when, during the course of otherwise successful therapy, an acute flare-up of arthritis develops temporarily in one or two joints; and (5) as an adjunctive measure in the orthopedic correction of certain joint deformities, especially flexion contractures being treated by non-surgical methods.

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The Management of Ureteral Stone

A Guide for Physicians in General Practice

ROBERT J. PRENTISS, M.D., RALPH B. MULLENIX, M.D. and
J. M. WHISENAND, M.D., *San Diego*

• *General practitioners are usually the first to observe a patient with ureteral stone, and often they practice in communities where consultation with a urologist is not immediately available.*

Study of the records of 423 patients with ureteral stone observed in private practice indicates that by following a definite system for diagnosis, relief of pain, determination of contralateral function, control of infection, and prophylaxis, general practitioners can manage the disease in the great majority of cases, and can determine when treatment by a specialist is imperative.

URETERAL COLIC due to calculus may be excruciatingly painful and is always dramatic and frightening to the patient. It ranks with biliary colic, ruptured viscus and acute hemorrhagic pancreatitis in the degree of pain and prostration. The clinical symptoms may simulate those of intestinal obstruction or appendicitis. On the other hand, the pain of dissecting aneurysm of the abdominal aorta may be mistaken for that of ureteral calculus. A condition so important to the patient demands understanding and rational management.

Usually the family physician is the first to examine the patient. In cities the usual practice is immediate referral to a urologist, but often in rural areas it is necessary that management of the patient be in the hands of a physician in general practice. In the belief that this is proper and safe in the vast majority of cases, the authors herein present a plan of diagnostic and therapeutic procedure, with indications for the need of urologic consultation, based on a review of the literature and on observation of 423 patients with ureteral stone.

REVIEW OF LITERATURE

In a review of the literature since 1945 relatively few articles on ureteral calculus were noted, and most of them were on methods of manipulative and surgical treatment rather than the general clinical aspects of interest to the practitioner. The general trend of the articles was toward conservatism and watchful expectancy rather than spectacular intervention. A few investigators advocated manipulative attacks in almost any situation. Two articles were particularly pertinent to the present discussion.

Higgins and Warden,[2] in a review of clinical experience at the Cleveland Clinic, emphasized preoperative study of the patient, including the causal factors, and diligent postoperative management to prevent morbidity and recurrence. These measures, coupled with a conservative attitude, reduced surgical intervention from 68 per cent to 30 per cent in ten years.

Dourmashkin[1] in discussing treatment of 1,550 patients with ureteral stones, emphasized the value of simple ureteral dilatation below the stone in cases in which expulsion did not occur spontaneously. In 99.7 per cent of 689 cases in which the stones were less than 5 mm. in diameter, and in 85.9 per cent of 741 cases in which the stones were larger than that, they were expelled after simple ureteral dilatation.

As to the 423 patients with ureteral stone observed by the authors: Sixty-nine per cent were male. In 56 per cent of the cases the stones were in the left ureter, in 0.7 per cent bilateral. The average age of the patients was 40.4 years, the extremes 7 and 81 years. The stones were analyzed in 52.6 per cent of the cases in the series: 42.4 per cent were composed primarily of calcium oxalate, 29 per cent of calcium phosphate, and 20.6 per cent of both elements. Two patients had cystine stones and six had uric acid stones, while other combinations including ammonium, magnesium, carbonates or urates composed the stones in the other patients. The diameter of the stones varied from less than 1 mm. to 15 mm. Ninety-seven and six-tenths per cent were opaque to x-rays.

The location of the stone when first observed by the authors was as follows: Upper one-third, 12.5 per cent; middle one-third, 8.3 per cent; lower one-third, 79.2 per cent. In 227 cases (53.7 per cent) the stone was passed spontaneously; 137 patients (32.4 per cent) were subjected to manipulative treatment of some kind, and 43 patients (10.1 per cent) had extraction procedures with the Councill or Johnson basket or loop catheter. Instrumental extraction was successful in 79.9 per cent of the cases in which

TABLE 1.—*Location of Stone Related to Means of Treatment, Hospitalization and Incidence of Recurrence*

Location of Stone	No. of Patients	Spontaneous Passage	Manipulative Treatment	Surgical Intervention	Per Cent Hospitalized	Average Hosp. Stay (Days)	Known Recurrence Per Cent
			Per Cent				
Upper Third	53	11.8	45.1	43.3	62	15	11.3
Middle Third	35	31.24	34.38	34.38	43	11	5.7
Lower Third	335	60.25	31.40	8.35	35	9	6.2

it was attempted, and 16 per cent of the patients had ureteral injury. (After extraction of stones, the authors make routine bulb ureteropyelograms to determine whether or not the ureter is injured.) Elective or mandatory surgical treatment (nephrectomy, ureterolithotomy, or pelviolithotomy) was employed in 63 patients (14.9 per cent).

The higher the stone in the ureter, the greater was the use of manipulation or surgical intervention, the more often the necessity of hospitalizing the patient, the longer the stay in the hospital, and the higher the incidence of recurrence (Table 1).

The average stay for the patients hospitalized (39 per cent) was 11.9 days. There were no deaths.

In 380 cases it was possible to make an accurate estimate of the interval between the first visit of the patient and spontaneous expulsion of the stone or assisted expulsion or removal. In 313 patients this interval was less than 15 days. The average interval was 13.2 days for 378 patients, excluding two patients in which the intervals were two and one-half and three years each. The interval extremes were one day to three years.

SYMPTOMS

It is generally accepted that ureteral stones originate in the kidney. The precipitation may occur spontaneously or in an area of local injury to mucous membrane. Underlying factors include: (1) Distant foci of infection; (2) congenital or acquired obstruction; (3) prolonged recumbency with stasis in the dependent calyces; (4) repeated or persistent urinary infection; (5) metabolic disorders resulting in excessive urinary excretion of calcium (as in hyperparathyroidism), uric acid or cystine; (6) vitamin A deficiency; (7) persistent excessive change in pH of the urine; (8) foreign body (blood clot) in renal pelvis; and (9) failure of protective colloids to prevent crystalloid adherence. Once a stone is formed, it makes further contribution to infection, local injury and obstruction, and acts as a nidus for further crystalloid precipitation.

Pathologic processes after urinary stone formation include infection in the ureter, the pelvis and the renal parenchyma accentuated by the hydronephrosis secondary to obstruction in the ureter. Permanent ureteral stenosis may result from the infection and injury incidental to the presence of the stone. Renal deterioration is the ultimate result of a stone blocking the ureter.

The dramatic and compelling symptom of ureteral stone is pain, usually located in the costovertebral angle with extension along the course of the ilioinguinal nerve. It never extends upward from the costovertebral angle. Variations include primary abdominal pain which may be so severe that localization as to side, abdominal quadrant, or back area is impossible. Rarely, low ureteral stone is accompanied by pain referred to the perineum and the pain may be mistakenly thought to arise in the male or female genitalia. The degree of pain varies from aching to excruciating. Frequently shock occurs from severe colic. The pain is caused by obstruction of the flow of urine with distention of the renal pelvis, and by local irritation and spasm in the ureter. The location and the extension of pain are not clear indications of the level of the ureteral stone.

If the shocking pain persists, abdominal distention may become so pronounced as to simulate that caused by intestinal obstruction, or a ruptured viscus. Nausea and vomiting, if present, follow the onset of pain. Urinary infection causes severe rigors and temperature ranging from 103° to 105° F. With infection, dysuria and urinary frequency occur. If the latter occur in the absence of infection, the stone is juxtavesical or in the intramural ureter. Gross hematuria occurs not infrequently.

Physical signs may be absent, or mild, or severe. Of particular interest are flank tenderness and muscle resistance occasionally spreading to the lower anterior abdominal wall. Abdominal distention with absence of peristaltic sounds is not uncommon. Surgical shock owing to the pain may confuse the issue.

Immediate laboratory studies are helpful. Microscopic hematuria is the rule. Pyuria is usually, but not always, present to some degree. Bacteria may not be observed on smears but usually grow on cultures. Gram staining should be done routinely to guide proper choice of urinary antiseptic. In women it is necessary to obtain specimens of urine by catheter if accuracy is to be maintained. Leukocytosis is a common concomitant but its presence is not a key diagnostic aid. Laboratory studies relative to prophylaxis, and radiologic survey will be discussed later.

MANAGEMENT AND TREATMENT

The following are factors in the management and treatment of patients with ureteral stone: (1) Control of pain, (2) survey of kidney function by excretory urography, (3) prevention or control of infection, (4) elimination of the stone by active or passive means, (5) regular progress examination and review during expulsion of the stone, (6) prophylactic measures for prevention of growth of present or formation of future calculi.

For the severe pain of ureteral colic, large doses of morphine or a similar drug are necessary. Intravenous injection is preferable for the first dose. The standard adult dose is given (morphine sulfate 15.0 mg.), followed in ten to fifteen minutes by a second full dose or fraction thereof if initial relief is not obtained. Subsequent subcutaneous injections are spaced according to need. Relaxing drugs such as atropine, Depropanex® or Transentin® may be helpful but should be considered only as adjuvants. After the acute colic, lesser pain is controlled with codeine or a similar drug given by mouth.

Kidney function determination within a few hours of the onset of pain is mandatory. Excretory urography is the method of choice to determine the integrity of the affected and of the opposite kidney, and to settle the diagnosis.

For study of the urinary tract by excretory radiographic methods, many films with variation in the timing of exposures and with the patient in various positions are required. No preparation of the patient is necessary although dehydration is desirable. A preliminary flat film of the abdomen is made, and by inspection of it the need for semilateral and/or upright views to localize opacities can be determined. Then the selected urocontrast medium is injected intravenously in a period of three to five minutes. In the absence of suitable veins, subcutaneous administration of the medium is satisfactory after dilution 2:1 with normal saline solution. The authors have found no satisfactory test for sensitivity to urocontrast compounds. The solution of choice is Diodrast® although Urokon® is satisfactory. Neoiopax® produces good contrast but causes brachial venospasm too frequently.

After completion of the injection the first film is immediately exposed and is inspected within five minutes. The intervals between subsequent films depend upon the time it takes for the medium to enter the structures to be viewed. In most patients a good pyelogram of the unaffected kidney will be visible in five to fifteen minutes. The appearance of the contrast medium in the obstructed kidney is usually delayed, but in most instances a pyelogram or nephrogram is visible within thirty minutes. If the medium does not enter the unaffected kidney, an emergency exists and immediate urologic consultation should be the rule. In later films, taken every fifteen to twenty minutes up to two hours, the ureter may be observed to be filling. In anterior-posterior and right and left semilateral views the shadow of opaque stones in the ureter will be within the path of the visualized ureter in all positions. Likewise, extraneous shadows, such as those of phleboliths, will be proven extra-urinary. In the rare instance of non-opaque stone, its presence will be revealed by ureteral obstruction, by filling defects in the urographic medium, or both. Upright films aid in localization. The bladder should be emptied by urination before the late films of stones in the lower ureter are made. In nearly complete obstruction, films exposed from four to twenty-four hours after injection may reveal a pyeloureterogram. Thus an accurate evaluation is obtained and a rational plan of treatment can be made. Occasionally excretory studies are unsatisfactory, and urologic consultation and studies with retrograde pyelograms become necessary.

After pain is relieved and radiographic proof of diagnosis is obtained and the function of the opposite kidney is determined to be adequate, attention may be turned to the third most important principle —the prevention or control of infection. In this regard, the simplest and the most important study is examination of the urine. For males, the specimen must be taken from the second glass; for females it must be obtained by catheterization. The degree of infection can be determined by microscopic examination of centrifuged sediment, and the kind of infection by examination of Gram-stained or methylene blue-stained specimens. Cultures are not necessary. Accurate selection of the proper urinary antiseptics depends upon whether Gram-positive cocci or Gram-negative bacilli are present.

The sulfonamide group of drugs, effective against both bacillary and coccal infection, are relatively cheap. Among them sulfadiazine and Gantrisin® are most effective. Penicillin is efficient only against coccal infections. The mycetogenic drugs have a wide range of activity but are expensive. Therefore, sulfonamides are the agents of choice for prevention or control in most cases. For severe coccal infection, however, penicillin should be employed, while the "mycins" will cover a wide range when the other agents are ineffective or are contraindicated. No small part of the ability of general practitioners to treat patients with ureteral stone depends on the proper use of the efficient urinary antiseptics now available.

Soon or late, depending upon circumstances, the physician must decide whether to refer the patient for active measures for elimination of the stone, or to treat him expectantly under careful observation.

The indications for urologic consultation are: (1) Inadequate or absent contralateral kidney, (2) intractable pain, (3) persistent infection or acute sepsis, (4) general deterioration, (5) persistent ileus, (6) large stone that almost certainly will not pass, (7) small irregular stone fixed in upper and/or middle one-third of ureter, (8) doubt in diagnosis necessitating retrograde pyelograms, (9) serious preexisting obstruction, (10) lack of progress in passing the stone from any location, (11) persistent nonfunction of affected kidney more than 14 days.

The first nine indications for referral are clear and should not be ignored. However, in the great majority of cases in which these conditions do not exist, it is safe to watch and wait. If that is to be done, the patient and his family must be indoctrinated to secure understanding and cooperation. In this effort it is useful to compare pregnancy to ureteral stone. The patient must recognize that "labor" will be inescapable in the delivery of the stone and that the physician is to observe, relieve pain, prevent complications and call for help if necessary. The authors have found drugs, such as neostigmine, to be valueless in aiding stone expulsion.

Minimum observation while waiting for the stone to be passed should include semi-weekly office visits to report progress and for examination, which should include microscopic inspection of centrifuged urine in wet mounts and in dry Gram-stained preparations. A flat film of the abdomen should be made weekly; and if the stone remains for a month, excretory urograms are mandatory. Any change in the course of the disease necessitates radiologic reexamination and general reevaluation. The use of antiseptics and pain-controlling drugs should be continued. His condition permitting, the patient should be encouraged to continue regular activities while conserving reserve. Expectant treatment may be continued indefinitely if proper control is exercised.

PROPHYLAXIS

Measures to prevent enlargement of the stone already present or the formation of calculi in the future should be begun as soon as the course of action has been planned. The prevention of ureteral stone is essentially the prevention of renal stone. Since urinary stone is a preventable and/or controllable disease, failure to advise prophylaxis is inexcusable. Principal factors in prophylaxis are fluid intake regulation, laboratory analysis of stone and of blood and urine, diet planning, medicine, and general measures.

Most important is to make sure of a large dilute urinary output. Intake of 3,000 to 4,000 cc. of liquids is required. Dilution of the urine will prevent more stones than all other measures combined.

Special laboratory procedures can be accomplished mainly in a physician's own laboratory. Analysis of the stone is of prime importance and is simply accomplished by the method of Winer and Mattice.[5] While cystine stones are rare, grave dietary errors may be permitted if cystinuria[4] is overlooked. Hypercalcinuria should be suspected if the result of a Sulkowitch test on a morning fasting specimen is positive. If the result of the Sulkowitch test is consistently positive and/or the patient has multiple, bilateral, or recurrent stones, tests to determine the content of calcium, phosphorus and protein in the blood and the urinary calcium excretion are advisable. (The latter four examinations must be done by an experienced technician.) If values above 11.0 mg. per 100 cc. for serum calcium, below 3.0 mg. per 100 cc. for serum phosphorus, and over 200 mg. per day for urinary calcium excretion are obtained, hyperparathyroidism must be suspected and consultation requested. As approximately 50 per cent of the serum calcium is bound to serum proteins, it is necessary to determine the serum protein values in order to interpret serum calcium results.

Since calcium stones predominate, a diet low in calcium is indicated in most situations. This is accomplished practically by advising against the eating of cheese, ice cream and milk. In some areas it is necessary to proscribe water that is not distilled. Elimination of foods[3] high in oxalate may be advisable for patients with recurrent calcium oxalate stones.

Dietary management is extremely important for patients with excessive urinary excretion of the amino acid cystine and uric acid.[2] Moderate to low protein dietary content with complete elimination of high purine foods is mandatory. Since uric acid and cystine will not precipitate and cystine will dissolve in alkaline urine, alkalization of the urine with basic ash dietary factor is logical.

The value of regulation of urinary pH in dealing with calcium urolithiasis is debatable. In the past the authors have insisted on a rigid acid ash regimen[2] but more recently this has been relaxed. Patients with calcium stones are now advised against citrus juices and tomatoes, to use rice and spaghetti often as potato substitutes, and to eat large amounts of prunes or cranberries (or the juices of those fruits) daily. This plan does not burden the patient, yet it does increase calcium solubility in an acid urine.

Certain medicines are valuable in preventing the formation of stone. Vitamin A in oral doses of 25,000 units daily is thought by some observers to maintain the renal epithelium in a normal condition. Alkalinizing or acidifying drugs are useful to supplement basic or acid ash diets. Aluminum hydroxide gels, such as Amphojel® or Basalgel®, divert phosphate excretion from the urinary to the intestinal tract and thus reduce the number of phosphate ions for combination with the calcium ion. Basalgel is given in oral doses of one ounce four times daily. Recently, subcutaneous administration of hyaluronidase has been advocated to enhance the colloid protective coating of crystalloids so that they do not progressively aggregate to form stones. The authors have had no experiences with either Basalgel or hyaluronidase. Vitamin D in usual doses appreciably increases urinary calcium excretion and hence should be avoided.

If in the original study with excretory urography there is evidence of preexisting obstruction as a factor in the formation of stone, the examination should be repeated; and if the presence of obstruction is confirmed, the patient should be referred to a urologist for correction of the condition. In any case, excretory urography should be carried out two or three months after elimination of the stone in order to make certain that obstruction such as ureteral stricture has not developed secondary to stone, or to manipulative or surgical trauma.

No patient should be released from active observation until the urine has become sterile as determined by the previously outlined means of examination. Routine examination of the urine is necessary three or four times yearly to detect reinfection. At least once or twice yearly a new plain x-ray film of the abdomen should be made.

It is important to emphasize to the patient that he has a controllable disease, to present to him a definite plan of periodic examination, and to explain the reasons for dietary and medicinal management. If focal infection is present, it is well to eliminate it. To insure a regular reminder, the patient should be instructed to test the urinary pH twice daily with nitrazine paper and to report immediately if variation from the desired level persists.

In addition to referral for definitive treatment in the acute situations already mentioned, patients suspected of hyperparathyroidism, with a history of recurring urinary stones, or with obvious renal deterioration, should be referred to urologists.

3415 Sixth Avenue.

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Excision of Precancerous Lesions of the Lip

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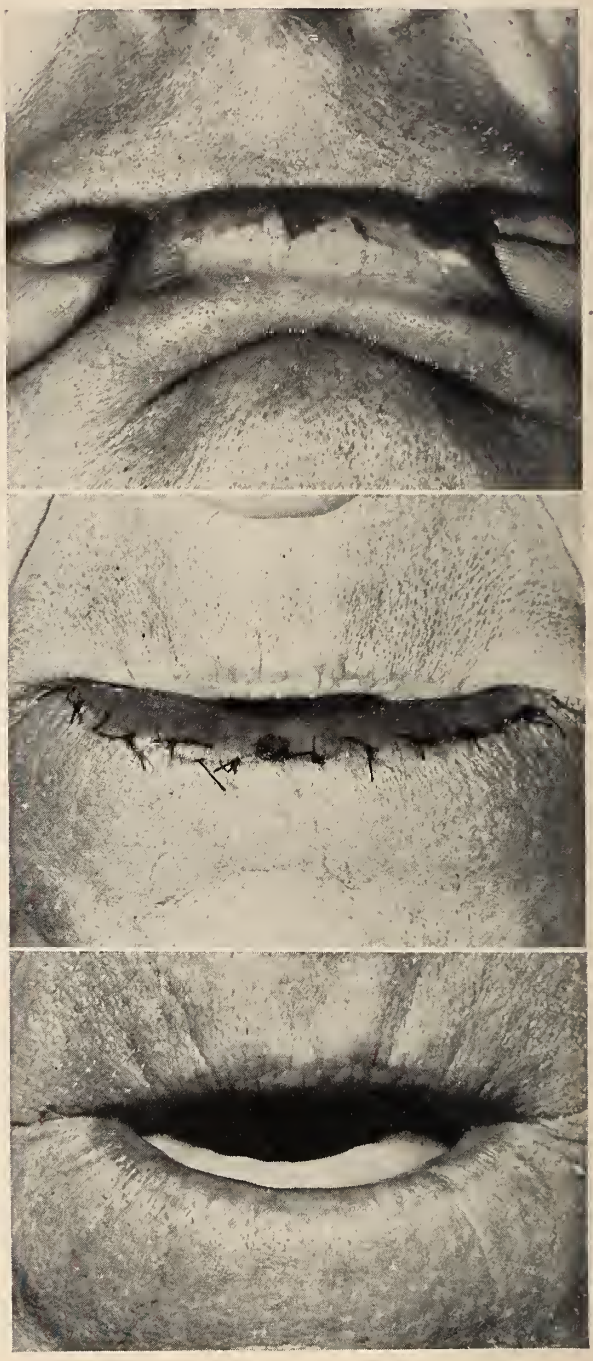
• A method of surgical treatment of precancerous lesions of the lip, by excision of the vermilion border and the advancement of the inner mucosa of the lip to cover the defect, satisfactorily removes the entire lesion and restores normal tissue to the lip surface.

AMONG THE PATIENTS presented to the usual hospital tumor board are a certain number with precancerous lesions of the lower lip such as leukoplakia, chronic ulcer, non-healing fissures and persistent scaling. Frequently the treatment that is recommended falls short of complete eradication of the lesion and does not give assurance that subsequent malignant change will not take place. Nor does it, as it should, provide covering of normal tissue for the lower lip so that with a minimum of precaution the lip will not again become diseased.

The purpose of this communication is to call attention to a simple, satisfactory, surgical procedure that is available for removal of precancerous lower lip lesions and for provision of new normal epithelium. In this procedure the entire diseased vermilion border is excised and mucosa advanced from inside the lower lip is drawn over the site. (See accompanying illustration.) The area of the vermilion border and buccal surface of the lower lip are infiltrated with procaine. The diseased vermilion border is excised, and the mucosa on the buccal surface of the lip then is undermined and drawn forward to cover the defect. Sutures of fine silk or cotton are placed on the mucocutaneous border. The scar becomes unnoticeable in a few months. Postoperatively there are moderate edema and ecchymosis that subside in a few days. The patient need not be entered into a hospital as a bed patient, but may return home following operation. After-care consists of the intermittent application of moist compresses for a few days to prevent crusting.

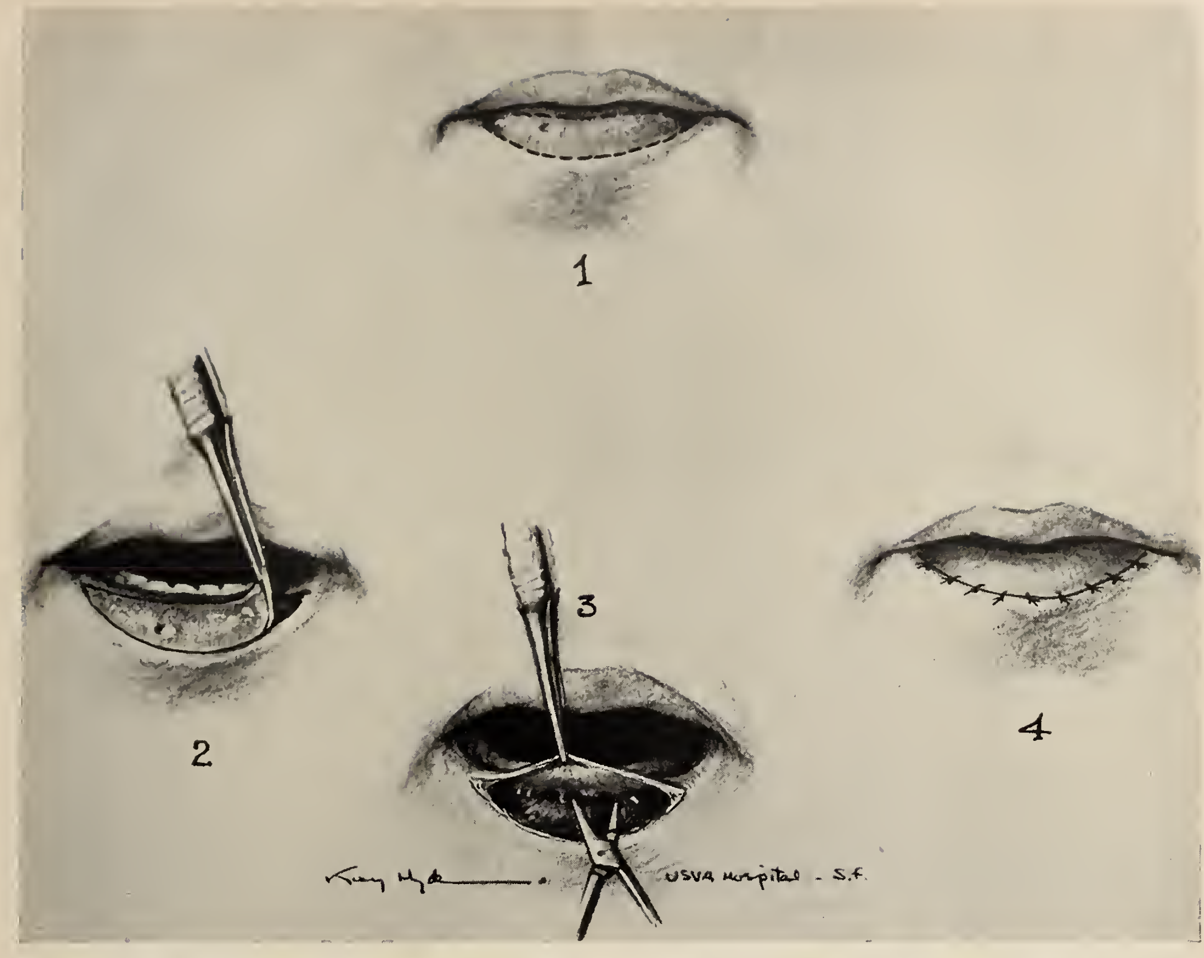
Occasionally the precancerous lesion is located on only one side of the lip. It is neverthless advisable to remove the entire vermilion border because of the possibility of recurrence in the unremoved portion of mucosa, and because the cosmetic result after complete mucosal advancement is better.

The removed tissue should be examined patho-



Upper—The lower lip of a patient with extensive thickened leukoplakia. *Middle*—The mucosal advancement, with sutures in place, on the sixth postoperative day. *Lower*—The result, one year after the mucosal advancement operation.

From the Surgical Service, Veterans Administration Hospital, San Francisco, California.



logically and appropriate procedures instituted should malignant change be noted.

At the Veterans Administration Hospital, San Francisco, the mucosal advancement operation has been readily combined with the standard "V" resection of a cancer of the lower lip in cases in which there were leukoplakic changes in the remaining vermilion border.

Erich[1] reported that there was no subsequent occurrence of an epithelioma of the lower lip in several hundred cases in which the mucosal advancement operation was used at the Mayo Clinic.

Because it is simple, assures complete removal of the lesion, makes the entire lesion available for microscopic examination, restores normal tissue to the lower lip, and gives excellent cosmetic results, the operation has become the standard method of treatment of precancerous lesions of the lower lip at Veterans Administration Hospital, San Francisco.

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Effects of Creatine Precursors in Arthritis

Clinical and Metabolic Study of Glycocyamine and Betaine

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• Twenty-two patients with arthritis received 5 gm. of glycocyamine and 20.16 gm. of betaine by mouth daily, in hospital and after discharge, for periods ranging from 13 to 42 days. A control group of 22 patients, indistinguishable from the treated group, were maintained on the same regimen and given placebos resembling the agents under study.

The condition of each patient was evaluated clinically before, during and after treatment, and x-ray and metabolic studies were made. No significant improvement attributable to the use of the drugs was observed.

In a preliminary report Borsook[2] indicated that certain precursors of creatine, when given by mouth to patients with rheumatoid and gouty arthritis, were clinically beneficial in a small series studied. In subsequent publications further studies on these creatine precursors, betaine and glycocyamine, were reported.[3, 4, 12, 22]

This report concerns observations on 44 arthritic patients in U. S. Navy Hospital at Oakland, fifteen of whom continued to receive therapy as out-patients after discharge from the hospital. Glycocyamine* and betaine* were administered to half of the patients: the others were controls who were given placebos in a "double blind" clinical study.

MATERIAL AND METHODS

The 44 patients observed were male naval personnel and veterans admitted for the treatment of arthritis. Age, duration of disease, classification of functional capacity and any concurrent disease are shown for each patient in Table 1.

The study was designed as a "double blind" experiment, using the techniques described by Greiner and co-workers.[14] with some modification necessary for a study of arthritis. The patients were placed in two groups, and as far as possible each patient in one group was matched by a patient in the other group with disease of the same clinical type and degree of severity. The 22 patients in the control group received an inert placebo. The 22 patients in the treated group received 5 gm. of glycocyamine and 20.16 gm. of betaine divided into two daily doses while they were studied in hospital; the same dosage divided into four daily doses was given to patients on whom study was continued after they left the hospital. The agents being tested were indistinguishable from the placebo, and were not identifiable to the patient, the physicians, or the ward attendants.

All patients admitted to the study were placed on a weighed diet containing 2,500 calories with 90 gm. of protein, and including a calculated daily intake of 5.0 gm. of sodium, 3.1 gm. of potassium, 1.0 gm. of calcium, and 1.6 gm. of phosphorus. Liberal amounts of vitamin C were present in the diet.

Moderate activity about the hospital was encouraged. In addition to the agent under study only analgesics were given and no additional therapy other than simple physiotherapy was used.

The investigation as originally designed was to include study and observation on each patient for a period of 48 days. A six-day preparatory period was allowed to stabilize the subjects under the conditions of the experiment. The treatment period with either agents or the placebo was originally intended to be 32 days, followed by ten days of continued observation; but in order to observe the possible effect of a longer treatment period, some changes in the original schedule were made. Furthermore, study had not been completed on a number of patients when the investigation was terminated because it became apparent that no significant results were being obtained even in those patients under treatment for the longest period of time.

As patients were admitted for study, they were collected into groups to facilitate the completion of the laboratory work. In the first group, 18 patients were treated for 42 days; in the second, twelve for 37 days; in the third, five for 31 days; in the fourth, seven for 23 days, and in the fifth, two for 13 days.

From the Metabolic Research Facility, United States Naval Hospital, Oakland, California.

The technical assistance of L. R. Clark, Lt., MSC, USN(W); L. E. Suiter, Lt., MSC, USNR(W); M. E. Hutchin, A.B.; C. J. Rogers, M.S.; and P. H. Dirstine, Ph.D., is gratefully acknowledged.

The opinions expressed are those of the authors, and do not necessarily reflect the views of the Medical Department of the Navy or of the Navy Department.

*These materials were supplied by the International Minerals and Chemical Corporation.

TABLE 1.—*General Features of Arthritic Patients Included in the Study.*

	Duration of Disease			
Age	Yrs.	Mo.	Type of Arthritis and Concurrent Disease	Functional Capacity*
20	....	9	Rheumatoid	II
34	5	....	Marie-Strumpell	I
52	30	....	Mixed—osteoarthritis, Marie-Strumpell	II
54	5	....	Traumatic	III
42	7	....	Osteoarthritis	I
28	2	....	Rheumatoid	II
22	1	5	Rheumatoid	I
56	4	....	Osteoarthritis	I
51	....	14	Gout	I
22	....	10	Rheumatoid	I
25	5	....	Rheumatoid	I
58	8	....	Gout	II
59	20	....	Mixed—osteoarthritis, rheumatoid	IV
48	7	....	Rheumatoid	IV
23	....	14	Rheumatoid	II
57	7	....	Rheumatoid; also arteriosclerotic heart disease with mild congestive failure	III
55	24	....	Mixed—osteoarthritis, rheumatoid	II
51	16	....	Mixed—osteoarthritis, rheumatoid; also hypertensive cardiovascular disease	IV
54	....	16	Rheumatoid	IV
61	9	....	Rheumatoid	III
35	7	6	Marie-Strumpell	I
41	12	....	Marie-Strumpell	II
58	8	....	Rheumatoid	III
40	6	....	Osteoarthritis	I
53	4	....	Osteoarthritis; also chronic sinusitis	II
56	10	....	Osteoarthritis; also severe occipital headache, etiology unknown	II
37	14	....	Rheumatoid	I
43	3	....	Osteoarthritis	II
31	7	....	Marie-Strumpell	II
40	6	....	Osteoarthritis	I
40	7	....	Osteoarthritis	I
37	4	6	Osteoarthritis	I
60	3	....	Osteoarthritis	II
55	31	....	Rheumatoid	III
31	2	6	Rheumatoid; also severe scleroderma and Raynaud's disease	I
62	20	....	Rheumatoid	III
39	5	....	Rheumatoid	II
37	4	....	Osteoarthritis	II
52	4	....	Mixed—osteoarthritis, rheumatoid	II
22	....	8	Rheumatoid	III
38	5	....	Osteoarthritis; also scoliosis of entire spine	II
53	33	....	Osteoarthritis	II
68	31	....	Osteoarthritis; also arteriosclerotic heart disease	III
21	10	....	Osteoarthritis	II

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*The patients were classified as to functional capacity in accordance with criteria for rheumatoid arthritis adopted by the American Rheumatism Association[20]: Class I, capable of usual activities, without handicap; II, adequate for normal activities despite discomfort or limited motion; III, limited; capable of little or none of usual activities or self-care; IV, largely or wholly incapacitated; in wheel chair or bed, little or no self-care.

Fifteen of the patients were discharged from the hospital and given the agents or the placebo on a different dosage schedule than had been followed in the hospital, for a period ranging from 13 to 65 additional days, with no restriction as to activities or diet.

The "daily report card" technique described by Greiner and co-workers,[14] slightly modified, was used as a continuous subjective estimate of clinical effect. The reports were analyzed statistically, both weekly and cumulatively.

The following methods were used to evaluate clinically the extent of the disease before, during, and after the treatment period: (1) Clinical history-taking and physical examination; (2) goniometry of affected joints; (3) cinematography; (4) weekly clinical appraisal by the physician; (5) weekly weight record; (6) daily temperature and pulse records.

Laboratory studies on each patient before and after the treatment period included: (1) hemogram; (2) urinalysis; (3) weekly determination of sedimentation rate (Cutler method); (4) roentgenograms of affected joints; (5) electrocardiogram (limb and CF_4 leads); (6) determination of basal metabolic rate; (7) bromsulfalein liver function test (5 mg. per kg., 45-minute test); (8) cephalin cholesterol flocculation liver function test (Hanger); (9) determination of total serum protein and albumin-globulin ratios; (10) weekly counts of eosinophils (Forsham and Thorn technique).

Additional chemical studies were made on five patients in the control group and on five patients in the treated group, for further appraisal of the possible metabolic effects of the agents being tested.

Various determinations of urine content were made on specimens from continuous three-day collections, and determinations on blood samples were made biweekly. These determinations and the analytical methods used are briefly outlined as follows:

1. *Glycocyamine*—The method described by Dubnoff and Borsook[7] was used for determination of glycocyamine in blood and urine. Blood was deproteinized with sodium tungstate and sulfuric acid, the precipitate was removed by centrifugation, and the supernatant fluid passed through an 85 mm. permutit column to remove arginine. The permutit column was washed, and a sample of this filtrate was submitted to colorimetry. Color was developed by the Sakaguchi reaction[23] using alpha naphthol, urea, and hypobromite, added in the order named, at 4° C. Analysis of urine for glycocyamine followed the same procedure except that deproteinization was not required.

2. *Creatine and Creatinine*—Folin's method,[9] utilizing the Jaffe reaction, was used on both plasma and urine in the determination of creatinine content. Creatine content was determined by difference after conversion to creatinine by boiling with acid.

3. *Nitrogen*—Determination of urinary nitrogen was accomplished using standard Kjeldahl procedures, the digestion being carried out with sulfuric acid and hydrogen peroxide. Ammonia thus formed was determined by distillation into standard sulfuric acid and the excess titrated with standard alkali.

4. *Urinary Urea Nitrogen*—Diluted urine was passed through a permutit column to remove ammonia, then treated with hypobromite in the Van Slyke-Neill apparatus, and the liberated nitrogen measured gasometrically.[18, 19, 21]

5. *Total Plasma Proteins and Albumin*—The colorimetric method described by Greenberg[13] was used—heating diluted plasma with alkali and development of color with the phenol reagent of Folin and Ciocalteu.[10] Albumin was determined by removal of globulin with 22.5 percent sodium sulfate. The filtrate containing the albumin was then treated in the same manner as in the total protein determination.

6. *Sodium and Potassium in Urine and Plasma*—The internal standard flame photometer was used to determine these metals in both urine and plasma.

7. *Urinary Calcium* — The method of Michaels and co-workers[17] as applied to urine, was found satisfactory, with slight modification. Calcium was precipitated as calcium oxalate. This precipitate was redissolved and calcium was again precipitated, this time as the phosphate, which, after separation, was dissolved in hydrochloric acid and the phosphate content determined by the method of Fiske and Subarrow.[8]

8. *Plasma Calcium*—The method of Clark and Collip[5] was used. Calcium was precipitated directly from serum with ammonium oxalate and the oxalate salt was then titrated with potassium permanganate.

9. *Serum and Urine Phosphorus*—A trichloracetic filtrate of serum was treated with sulfuric acid and sodium molybdate to form phosphomolybdate. This was reduced with stannous chloride to give a blue color which was measured colorimetrically.[16]

The method of Fiske and Subarrow[8] was used in the analysis of urine for phosphorus. The same principle described above was applied, except that the reducing agent was 1, 2, 4-aminonaphtholsulfonic acid.

10. *Uric Acid in Plasma and Urine*—The method described by Folin[11] in 1934 was used. This was based on the reducing action of uric acid upon a phosphotungstic acid reagent which produces a blue color. The procedure was carried out on a filtrate of plasma, and directly on urine.

11. *Alkaline Phosphatase*—Serum was incubated with buffered glycerophosphate at pH 8.6 after the method of Bodansky.[1] The inorganic phosphate which was liberated was then determined as described earlier in this presentation.

12. *17-Ketosteroids*—Urine was heated with hydrochloric acid and extracted with ether after the procedure described by Drekter and co-workers.[6] A sample of the ether extract was then evaporated and the residue was subjected to the Zimmerman reaction[15] for the colorimetric determination of dehydroisoandrosterone.

RESULTS

A. *General Observations on All Patients*

On analysis of the "daily report card" data of the hospitalized patients, no significant difference in relief of pain was apparent between the treated and the control groups. The "daily report card" data on the 15 patients (8 treated, 7 controls) on whom study was continued after their discharge from hospital indicated a slight advantage for the treated group; however, study of all the data on the 15 patients, covering both the in-patient and out-patient periods, revealed very little advantage, if any, ascribable to the agents under test.

To ascertain the effect of the agents on any one specific type of arthritis, an analysis was made of "daily report card" data for certain patients with well-defined clinical varieties of arthritis. No significant difference in relief of pain was apparent between the control and the treated groups.

Clinical results after treatment of each patient on the in-patient study are summarized in Table 2. In this appraisal the investigators had at hand for comparison all the clinical laboratory data, the "daily report card" data, goniometry of the affected joints before and after treatment, and clinical observations on each patient. No significant difference was apparent from the clinical evaluation of treated and control groups.

Comparison of goniometric findings prior to and subsequent to the treatment period indicated that there was no trend in either the treated or the control group. Motion pictures taken before and after treatment showed no advantage for either group of patients. No significant alteration in weight or in temperature was observed in either group.

The sedimentation rate was determined weekly by the Cutler method for each patient. Sedimentation rates increased or decreased in various patients from both the test and control groups, but there was no uniform trend in either group.

Follow-up roentgenograms, electrocardiograms, determination of basal metabolic rate, bromsulfalein and cephalin cholesterol flocculation tests, and determination of serum protein content were completed only on patients in the earliest groups of 18 patients—9 treated and 9 controls. A study of these data indicated that there was no significant change in any patient. It was therefore decided that no information could be gained by repeating these time-consuming examinations on the remainder of the patients. All roentgenograms on these patients were interpreted by a radiologist and in no patient was there reported any alteration in the appearance of the affected joints.

Weekly eosinophil counts by the Forsham and Thorn technique were done on all patients included in the study. Analysis of the accumulated data indicated that there was no significant alteration during the course of in-patient observation.

B. *Special Chemical Studies on Ten Patients*

Extensive chemical studies were carried out on ten patients, five treated and five controls. These studies were designed to investigate the mechanism of action of glycocyamine and betaine should these agents prove to be effective in arthritis. All blood tests were done on venous samples taken after an

TABLE 2.—*Summary of Final Evaluation by Physician of Patients on In-Patient Study.*

	Clinical Appraisal								
	No Change		Slight Improvement		Moderate Improvement		Marked Improvement		Number of Patients
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Controls	12	54.5	6	27.3	4	18.2	0	0	22
Treated patients	14	63.6	4	18.2	2	9.1	2	9.1	22

overnight fast. Urinalyses were done on samples from pooled three-day collections. In all cases treatment or placebo administration was begun on the sixth day of study.

The five patients who received glycocyamine began to excrete large amounts of the drug in the urine soon after treatment was started. In three cases glycocyamine excretion began to decrease about the thirtieth day of treatment and trended downward for the remainder of the period. The explanation for this is not apparent. This phenomenon was not accompanied by a corresponding increase in creatine or creatinine excretion or by increased amounts of glycocyamine, creatine or creatinine in the blood. However, nitrogen balance data indicated that these patients were retaining larger amounts of nitrogen than they had retained earlier in the experiment. This observation suggested that the metabolic disposition of administered glycocyamine had changed so that a greater proportion of the material was stored or was altered in such a manner that it did not appear in the urine. It is also a possibility that absorption from the gastrointestinal tract was reduced to such an extent that much of the ingested glycocyamine was destroyed or excreted unchanged in the feces. As no stool analyses were done during this study, this possibility cannot be confirmed. Urinary excretion of glycocyamine in the control group was consistently low throughout the experiment.

Glycocyamine blood levels were determined for both treated and control groups, and there was no significant difference between the two. This is attributed to the fact that the blood specimens were taken in the morning, after a 12-hour fast, and some 12 hours after administration of glycocyamine. Unpublished data from records in the hospital indicate that in about six hours after the oral administration of 5 gm. of glycocyamine with betaine the concentration of glycocyamine in the blood has returned to the preingestion level.

The excretion of creatine and creatinine was notably increased in all patients who received glycocyamine and betaine. This increase was expected, since these agents are known to be creatine precursors, and it clearly indicated the conversion of glycocyamine into creatine. Blood levels of creatine and creatinine, however, were not significantly different between the treated and the control groups, a finding which was not unexpected in view of the ready elimination of these substances by the kidneys.

Urinary excretion of nitrogen was at a higher level in the treated patients than in the controls. This difference is largely accounted for by nitrogen originating from substances other than urea. Glycocyamine probably accounted for most of this extra nitrogen.

Of the ten patients selected for metabolic studies, those in the treated group all stored nitrogen consistently, as expected, but had a tendency to increased storage in the last twelve to fifteen days of the study in three of the cases. This increase occurred at a time when glycocyamine excretion in the urine was decreasing, as was pointed out earlier in this presentation. More variability in nitrogen balance was observed in the four control patients, two of them having persistent positive nitrogen balance while the remaining two had pronounced variability.

Serum protein content changed little or not at all during the study and was practically identical for treated and control groups.

If clinical improvement had been noted after the administration of glycocyamine and betaine, the influence of the adrenal gland in this effect would be of interest. Urinary excretion of sodium and potassium, which is a good index of adrenocortical activity, and the plasma levels of these elements were therefore studied. There was no significant difference between the two groups in either urinary excretion or plasma content of sodium and potassium.

Because of the reported change in bony abnormalities in rheumatoid arthritis during treatment with glycocyamine and betaine, the urinary excretion of calcium and phosphorus and the content of these elements in the blood, were studied. While the treated patients excreted daily more calcium than did patients in the control group, this cannot be attributed to the treatment because there is no change apparent after institution of therapy. In general, there appears to be no difference between the two groups in phosphorus excretion or in content of calcium or phosphorus in the blood, nor in content of alkaline phosphatase in the serum.

Uric acid content in the urine and in the plasma of treated patients was practically identical with that in patients in the control group throughout the experiment. One patient, in the control group, with arthritis of the gouty type, had a persistently high level of uric acid in the blood.

As it had been reported[2] that patients given glycocyamine and betaine were likely to have periods of hypoglycemia, the level of sugar in the blood was regularly observed during this study. Once again there was no detectable difference between the treated and control groups although in both groups, for no apparent reason, a slight downward trend was confirmed during the study. Diet may have been the causative factor.

Determinations of urinary 17-ketosteroids were made regularly in the first eighteen days of the study. There was no apparent deviation from normal in either treated or control patients.

CONCLUSION

Under the conditions of the study here reported, no significant advantage has been shown to result from oral administration of glycocyamine and betaine to patients with arthritis of various types.

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Incidence of Poliomyelitis

The Effect of Tonsillectomy and Other Operations on the Nose and Throat

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• *A statistical survey was made of all the cases of poliomyelitis occurring in all of Los Angeles County during the three years of 1949, 1950 and 1951 in an attempt to determine the effect of operations on the nose and throat on the incidence of poliomyelitis. Tonsillectomy and adenoidectomy were the only operations noted with any degree of frequency. Yet, in the total of 3,601 cases of poliomyelitis that occurred in this three-year period there were only 20 (0.55 per cent) in which the patient had had recent tonsillectomy and adenoidectomy.*

The incidence of this disease in patients who had had tonsillectomy and adenoidectomy was compared with the "expected" incidence as determined from the incidence in other patients, in the same age group. There was no significant difference between actual and expected incidence even during the summer months when most cases of poliomyelitis occurred. The same was true with regard to recently tonsillectomized patients in the epidemic months of July through October.

In a separate survey of 675 patients with poliomyelitis, it was noted that only 30 per cent ever had had tonsillectomy or adenoidectomy. Inasmuch as it is estimated that one of every three persons in the general young population nowadays has had tonsillectomy and adenoidectomy, this figure is no more or less than could be expected.

Operations on the nose and throat, especially tonsillectomy and adenoidectomy, have been accused of increasing the incidence of poliomyelitis. Since 1938 many articles have been written refuting or substantiating this contention. In 28 articles on the subject that were reviewed by Mills[2] late last year, opinions were about evenly divided as to whether or not poliomyelitis is more likely to occur in persons who have had tonsillectomy and adenoidectomy, either recently or in the more remote past. However, most of the investigators expressed belief that if poliomyelitis is contracted soon after tonsillectomy and adenoidectomy, there is increased likelihood that the disease will be of the bulbar type.

With the splendid cooperation of the Los Angeles County and the Los Angeles City health departments, a continuing three-year statistical study of complete data on all cases of poliomyelitis occurring in the entire county during the years 1949, 1950 and 1951 was carried out. Pertinent data from that study are presented here as a basis for conclusion as to whether or not operation on the nose and throat caused an increase in the incidence of poliomyelitis in Los Angeles County during those years.

In the entire county there were 1,229 cases of poliomyelitis in 1949, 984 in 1950 and 1,388 in 1951, or a total of 3,601. There was record of only three operations on the nose and throat other than tonsillectomy and adenoidectomy in the three-year period—one polypectomy, one removal of a biopsy specimen from the neck, and one excision of an external nasal cyst. (It is interesting that each year there were more dental extractions than tonsillectomies and adenoidectomies.)

The effect of recent tonsillectomy and adenoidectomy was studied first. Of the 1,229 cases of poliomyelitis in 1949[1] there were only five in which the patients had had the operation during the 30-day period preceding the onset of the disease. In 1950 eight of the total of 984 patients with poliomyelitis had had recent tonsillectomy, and in 1951 seven of 1,388. Not only is this total of 20 cases out of 3,601 (0.55 per cent) seemingly insignificant, but it is noteworthy that in 1951, the year in which the incidence of poliomyelitis was highest, there were fewer patients with recent tonsillectomy than there were in the year of the least incidence, 1950. If recent operation were a factor, the number of such cases in 1951 should have been about one-third greater than the number in 1950. Further, when the month of onset (Table 1) of these 20 cases was considered it was noted that fewer cases (nine) occurred during the months of highest poliomyelitis incidence, July through October, than during the months of lower incidence.

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TABLE 1.—*Month of Onset of Poliomyelitis in Patients with Recent Tonsillectomy and Adenoidectomy*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1949......	....	....	....	1	....	1	....	2	1	....	....	....
1950......	....	....	....	....	1	2	1	1	1	....	2	....
1951......	....	1	....	....	....	3	2	1	....	....	....	....
	—	—	—	—	—	—	—	—	—	—	—	—
		1		1	1	6	3	4	2		2	

TABLE 2.—*Incidence of Poliomyelitis in Children 2 to 8 Years of Age in Los Angeles City*

	Number of Children in Age Group	Cases of Poliomyelitis in Age Group	Incidence of Poliomyelitis in Age Group
1949......	239,369	177	1:1,352
1950......	257,660	202	1:1,275
1951......	264,914	265	1: 999

TABLE 3.—*Expected and Actual Number of Cases of Poliomyelitis in Children 2 to 8 Years of Age with Adenotonsillectomy Done in Each of Years 1949, 1950 and 1951*

	Estimated Total of Adenotonsillectomies Done in Los Angeles City	Incidence of Poliomyelitis in Age Group (From Table 2)	Incidence of Poliomyelitis in Patients with Adenotonsillectomy Expected	Actual
1949......	14,812	1:1,352	10.9	10
1950......	14,586	1:1,275	11.5	8
1951......	14,544	1: 999	14.5	10

TABLE 4.—*Number of Cases of Poliomyelitis in Children 2 to 8 Years of Age, Los Angeles City, by Months*

Month	1949	1950	1951	Total	Three Year Total Within Month After Tonsillectomy and Adenoidectomy
Jan.	18	6	26	50	0
Feb.	4	2	10	16	1
Mar.	7	8	2	17	0
April	3	13	14	30	1
May	14	13	8	35	1
June	26	24	28	78	6
July	70	52	91	213	3
Aug.	75	66	131	272	4
Sept.	97	61	126	284	2
Oct.	62	48	97	207	0
Nov.	45	64	54	163	2
Dec.	21	36	28	85	0

In the last two columns in Table 3 the actual incidence of poliomyelitis in patients who had had adenotonsillectomy done in each of the three years can be compared with the expected incidence of poliomyelitis in the same number of children in the two to eight year age group, and it is noted there is no significant variation.

Another step in the investigation was to determine the expected and the actual incidence of poliomyelitis in the child population of Los Angeles City in the age group of two to eight years inclusive, the years in which almost all tonsillectomies and adenoidectomies are performed (see Tables 2 and 3). As in 1949,[1] reasonably accurate information on this age group was obtained. The Board of Education and the Bureau of Vital Statistics supplied population figures, and data on operations were obtained in replies to questionnaires sent to large hospitals in the city.

In a three-year period in Los Angeles City fewer cases of poliomyelitis followed recent tonsillectomy and adenoidectomy during the four months of highest incidence of the disease, July through October, than during the remainder of the year (Table 4). The highest total for any one month was that for June—six cases. Yet the operations in those cases were done in May or June, which were months in which the incidence of poliomyelitis was relatively low. This does not seem consistent with the theory that increased presence of the virus in the nasopharynx at the time of operation leads to increased incidence of the disease.

Inasmuch as the highest incidence of poliomyelitis occurs during the summer months, and because those are the months in which the fewest tonsillectomies are done (owing to the controversy discussed herein), data were compiled on expectancy and on the actual number of cases of poliomyelitis occurring in children two to eight years of age in various spans of time—periods of 10 months, 8 months, 6 months and 4 months—in which the incidence of poliomyelitis is seasonally highest (Table 5).

In Table 5 it will be noted that there was no statistically significant variation between the expected

TABLE 5.—*Application of the Chi-Squared Formula to Variation Between Expected and Actual Number of Cases of Poliomyelitis Among Patients 2 to 8 Years of Age Who Had Had Tonsillectomy and Adenoidectomy in Same Year*

Period	Expected 1949	1950	1951	Actual 1949	1950	1951	Chi-Square 1949	1950	1951
Entire year..	10.9	11.5	14.5	10	8	10	0.07	1.07	1.39
Feb. to Nov...	9.3	9.2	11.8	10	8	10	0.05	0.16	0.27
April to Nov...	6.8	7.1	8.5	10	8	9	1.52	0.11	0.03
May to Oct...	4.3	5	5.8	8	6	9	3.18	0.20	1.76
July to Oct...	1.7	2.5	2.0	7*	4	8*	19.11	0.90	18.00
July to Oct. (operation within 30 days of onset).........................	1.7	2.5	2.0	1.5	2	2	0.02	0.10	0.00

* Statistically significant deviation from expectation. Deviation of same order was not present, however, when only cases in which operation had been done within 30 days of onset were considered.

and actual cases except in the four-month period of July through October of 1949 and 1951 (but not of 1950). It is to be noted, however, that the subjects were persons who had had tonsillectomy and adenoidectomy *at any time* in the year in which they had poliomyelitis, not alone those who had been operated upon within one month of onset. When only those who had had tonsillectomy and adenoidectomy within thirty days of onset were considered, there was no significant deviation between the expected and the actual number of cases even in the months when the incidence of poliomyelitis was highest and the number of operations lowest.

In 1951 an additional study was done on the 675 cases of poliomyelitis occurring in Los Angeles County exclusive of Los Angeles City to determine how many of the patients ever had had tonsillectomy and adenoidectomy. Only 206 (30 per cent) of them had had the operation and 469 (70 per cent) had not. At first blush this fact might be considered to indicate that persons who had not had the operation were considerably more likely to contract poliomyelitis than were those who had had it. However, as numerous observers have estimated that only about one-third of the general young population has had tonsillectomy, it should be expected that ordinarily some 33 per cent of persons contracting poliomyelitis have had the operation. The figure of 30 per cent in this series. then, was about in line with expectation.

It was therefore concluded that operations on the nose and throat, including tonsillectomy and adenoidectomy, either recent or done long before, had no significant effect, statistically, on the incidence of poliomyelitis in Los Angeles County during the three-year period 1949-1951.

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As clinical observers, we study the experiments which Nature makes upon our fellow-creatures. These experiments, however, in striking contrast to those of the laboratory, lack exactness, possessing as they do a variability at once a despair and a delight—the despair of those who look for nothing but fixed laws in an art which is still deep in the sloughs of Empiricism; the delight of those who find in it an expression of a universal law transcending, even scorning, the petty accuracy of test-tube and balance, the law that in man, "the measure of all things," mutability, variability, mobility, are the very marrow of his being.

—William Osler, in his address to the Army Medical School, Washington, February 28, 1894.

Poliomyelitis and Parenteral Injections

A Review of Recent Literature

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• *Data presented in the literature as to the relationship of poliomyelitis and recent prior injections include several aspects. The coincidence of paralysis in the same site as a recent injection has been considered the most definitive evidence. The fact of an inordinately large number of cases of paralysis of an arm where a recent previous antigen injection was recorded offered less specific corroboration. The larger number of cases among persons who had had an injection in the month preceding onset than among persons with injections in more distant months was noted. This observation was supported when similar information was obtained in a comparison of injection histories for persons who had the disease with the histories of persons who did not have it. The interval between injection and onset among persons who had the disease within a month of injection suggested something other than chance relationship. There is limited information indicating increased severity of paralysis in the injected limb. Evidence is divided on whether or not there is more paralytic disease among patients with recent injections. Similarly, the evidence is no more than suggestive with regard to increased severity of spinal paralytic disease. The mechanism or nature of such a phenomenon is unexplained. However, as Anderson and Skaar said, "considerable attention must be attached to the fact of uniformity of results in a series of independent observations even though each may be small."*

Several accounts since 1921 of poliomyelitis following immunization procedures have been cited by Faber,[6] and by Greenberg and co-workers.[10] These reports were said to present observations on one or several cases. Faber noted that until recently this occurrence was considered so infrequent, however, as to be unimportant. Leake[16] in 1935 and Lambert[15] in 1936 recorded observations on larger numbers of cases of poliomyelitis following injections.

In 1950 several reports[2, 9, 13, 19, 20] in the British medical literature presented data indicating an association between the injection of an immunizing agent and subsequent paralytic poliomyelitis. Since then other observations[1, 8, 10, 11, 14, 17, 21, 22, 26] relevant to the problem have been recorded. It is the intent of this presentation only to summarize the available evidence as presented and not to critically evaluate the data.

The literature, from the time of these reports in 1950 on, was searched in detail and selected earlier references were reviewed. In a summary of thirteen series of observations on the association of an injection and subsequent poliomyelitis, the general features are first noted and then the specific observations are reviewed. Second, some evidence is presented in these reports, as well as hypotheses, concerning the possible mechanism or cause of such an association. Finally, the available data on the measurement of the risk involved are noted. For the purpose of comparison in this report, an association between an injection and poliomyelitis is defined as "involvement of the inoculated limb, alone or in combination with other sites within one month after the inoculation."[22]

All thirteen reports were of retrospective nature in that illness occurred, a diagnosis of poliomyelitis was made, and then a history of preceding injections was obtained. The time elapsed between an illness and the collecting of information pertaining to prior injections was stated in five series.[1, 10, 11, 14, 17] For all of these the interval was less than three months.

In the thirteen studies, histories of injection preceding clinical illness were obtained for different intervals of time. Two reports[9, 19] presented data only for cases with an onset in the one month following an injection. The other eleven series recorded information for periods from two months before onset to a lifetime record of immunizations. The cases with histories of different intervals between an injection and onset were compared for the frequency of injections by time periods; for the distribution of paralyses; for the severity of paralyses; and for the types of clinical disease.

Three of these series recorded observations on persons who did not have recognized poliomyelitis.

From the Division of Preventive Medical Services, California State Department of Public Health.

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TABLE 1.—*Poliomyelitis Cases Developing Within Three Months After the Last Known Injection. (Selected Studies 1946-1951)*

Year of Observation	Area Studied	Investigators	Total Cases Studied	Three Months Total with Injections	Interval-Injection to Onset (Months) 0-1	1-2	2-3	Remarks
1946	Minnesota	Anderson and Skaar	1302	60	33	12	15	Total reported cases 2,881. Immunization history on 2,677. 1,302 under age 8 years with history studied.
1949	Victoria, Australia	McCloskey	620	53	41	9	3	Entire epidemic 675 cases. Injection history data not obtainable for 55.
1949	England and Wales	Hill and Knowelden	410	62	42	20		Total reported cases 5,920. Under 5 years 2,163 cases reported.[4] Selected study group under age 5 years from areas of high incidence of poliomyelitis.
1949-50	New York City	Greenberg, et al	1300	231	132	54	45	All cases under age 11 years studied.
1950	Belfast, Ireland	McLoed	98	5	2	3	....	Entire epidemic studied.
1950	Connecticut	Lieben	411	24	15	4	5	Consecutive reported cases beginning July 1950 studied.
1951	Illinois (exclusive of Chicago)	Illinois Dept. Public Health	1601	91	44	28	19	Data collected from reported cases all ages.

In two,[10, 13] a control was matched for age and sex to a case, and the date of onset of the case was then used to determine the time relationship of prior injections for the control. In one,[14] similar information was obtained for the case and for household members where the case occurred as well as for the occupants of three pre-selected neighboring households.

The nature of the groups reported varied. One study[19] recorded observations made personally by a physician. another[2] noted the findings in the admittances to one hospital. Four reports[8, 9, 10, 11] resulted from the study of reported cases in different cities. One[22] noted findings in a county epidemic while five[1, 14, 17, 20, 26] were the result of statewide observations. One[13] was an age-selected sample of the reported poliomyelitis cases from 33 administrative areas of England and Wales.

In all areas the patients studied for this association were diagnosed as having poliomyelitis. The illnesses appeared indistinguishable from other reported cases of poliomyelitis noted during the same intervals. No postmortem findings have been recorded in these series to confirm the clinical diagnoses. Poliomyelitis virus was isolated from the feces of two patients with associated findings.[18]

The early reports in 1950 were from England and Australia. Subsequent studies were reported from Belfast, Ireland,[22] Los Angeles City,[11] Minnesota,[1] New York City, [10] New York State (exclusive of New York City),[14] Illinois (exclusive of Chicago),[25, 26] and Connecticut.[17] The Minnesota study was based on cases reported in 1946. Most reports dealt with events occurring in 1949 and 1950, although observations were recorded from the years 1944 to 1951. Most of the observations were made during periods of high poliomyelitis incidence. In several reports[1, 10, 11, 14, 25] the pattern of incidence of cases with recent injections paralleled closely the seasonal distribution of the reported cases of poliomyelitis.*

In the thirteen studies reviewed, the evidence presented as to the relationship of injections and poliomyelitis was based on the history of prior injections and the time interval from injection to onset. Comparisons were then made as to the type and severity of disease, and most specifically as to the site of paralysis, in relation to the interval between an injection and onset of the disease.

History of Prior Injections. The length of time in months for which data were presented to show the intervals between an injection and onset varied with different reports. All thirteen gave injection data for the month preceding onset. Ten reports recorded observations for the two preceding months. Detailed information for three months was presented in seven series. Five accounts contained data including the previous six months. Information for the prior twelve months was listed in three reports. While some of the accounts recorded observations for even longer periods, the exact time periods were not assessable since the data by individual cases were not listed.

Table 1 presents data from the seven[1,10,13,17,21,22,25] reports which state the history of inoculation events for the 90 days preceding onset of disease. With one exception, there were noted a larger number of cases with a record of an injection in the month preceding onset, than in the second and third preceding months. The exception was an epidemic of 98 cases in Belfast, Ireland.

The significance of Table 1 is emphasized by the data presented in Table 2. Histories of inoculations for comparable periods were obtained from controls as well as from patients. Different methods of selecting controls were used in each study. In two se-

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*Information on these data for references[1, 10, 14, 25] referred to here was obtained by personal communication with the authors.

TABLE 2.—*History of Inoculation by Time Interval (Months)—Cases of Poliomyelitis and Selected Controls.* (Selected Studies 1949-1950)*

HILL AND KNOWELDEN

Group	Total Observed	Total Inoculated	Interval—Last Injection to Onset (Months) † 0-1	1-2	3-5	6-11	12+	Not Inoculated	Inoculation History Unknown
Cases	164	96	16	8	9	22	41	50	18
Controls	164	83	1	10	10	27	35	67	14

GREENBERG AND CO-WORKERS

Group	Total Observed	Total Inoculated	Interval—Last Injection to Onset (Months) † 0-1	1-2	2-3	1-12	12+	Not Inoculated	At Onset or Unknown
Cases	619	593	56	19	21	163	334	14	52
Controls	619	592	21	25	15	173	358	18	49

KORNS AND CO-WORKERS

Group	Total Observed	Total Inoculated‡	Interval—Last Injection to Onset (Months) § 0-1	1-2	Not Inoculated
Cases	2,137	311	226	85	1,826
Controls	20,765	1,397	979	418	19,368

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* The controls were selected by different methods in each study.

† Interval for controls was from the last injection to the date of onset of poliomyelitis in the "matched" case.

‡ All numbers in this table except "Total Observed" were calculated from percentage tables in the published article.

§ The interval for controls was from the last injection to the date of onset of the index case.

ries,[10, 13] in which controls matched for age and sex were used, only in the prior one month was there a pronounced increase in the incidence of inoculations in patients as compared with the controls. In 1950 in an extensive study in upstate New York[14] with 2,137 cases and 20,765 controls, it was noted that there were more cases among persons who had had injection within one month prior to onset than among persons given injection in the second prior month, but also there was a significantly higher incidence of injections in patients than in controls for the two month period. This will be commented on later.

Further refinement is afforded by the data in six reports which gave in days the intervals between an injection and the onset of poliomyelitis where that period was less than one month. Table 3 records this information for 156 cases. Rather than an expected random distribution of occurrence after an injection, the onsets were distributed in a pattern somewhat resembling a normal curve. In 126 or 81 per cent of the 156 cases, onset was from 5 to 19 days after an injection, while in 65 cases or 42 per cent onset occurred within a period of 10 to 14 days after injection. In three other studies[2, 9, 11] using weekly intervals a similar distribution of cases was noted. The data of Korns and co-workers[14] showed similar distribution for cases in which injections had been given in the arms. Their findings with leg injections showed the largest number with an interval of 1 to 7 days between injection and onset. The injections in this latter analysis were mostly with penicillin, although 14 of the 71 patients had antigen injections. No definite grouping was noted in the evidence presented by Greenberg and co-workers[10] for cases occurring within a month after injections of all types. As to children who had been given diphtheria-pertussis-tetanus immunization injections, however, there was noted a larger number of cases in the second week after injection. One report[22] included too few cases for analysis of this kind, while in one preliminary report[26] this information was not stated.

TABLE 3.—*Cases of Poliomyelitis with Known Injection Less Than 30 Days Prior to Onset—By Interval in Days Between Injection and Onset of Illness. (Selected Studies 1944-1951)*

Investigators	Total Cases Less than 30 Days	Interval in Days—Last Injection to Onset 0-4	5-9	10-14	15-19	20-24	25-29
Total all investigators	156	5	30	65	31	17	8
Anderson and Skaar	33	1	3	17	5	6	1
Freeman	12	....	3	7	1	1	....
Hill and Knowelden	42	1	7	15	13	4	2
Lieben	15	....	3	6	5	1	....
Martin	14	1	1	3	5	2	2
McCloskey	40	2	13	17	2	3	3

Type and Severity of Disease. Three studies recorded observations as to whether the cases were paralytic or non-paralytic and related these data to the history of injections (Table 4). The data of Greenberg and co-workers[10] indicated no clear parallel or disparity between incidence of paralysis and history of injection. The Illinois data showed less paralytic disease for the group with an injection in the month preceding onset. The observations from upstate New York indicated that, especially in the age group under five years, there was a higher incidence of paralysis among patients who had had injections within two months of onset than among those who had not.

The different clinical types of paralytic disease were noted in four studies. The evidence recorded by Greenberg and co-workers[10] and for the Illinois data[26] revealed no essential relationship between the incidence of any of the clinical types and the length of time between an injection and the onset of polio-

TABLE 4.—*Cases of Poliomyelitis by History of Prior Injections and Presence or Absence of Paralysis for Combined Ages. (Selected Studies 1949-1951)*

GREENBERG AND CO-WORKERS* (ages 0 through 10 years)

Paralytic Status	Total Injected	Interval—Injection to Onset (Months) 0-1	1-12	12+	Not Injected
Paralytic	843	101 (76%)	269 (78%)	473 (67%)	38 (84%)
Non-Paralytic	333	31	74	228	7

ILLINOIS DEPT. OF PUBLIC HEALTH (all ages)

Paralytic Status	Total Injected	Interval—Injection to Onset (Months) 0-1	1-12	12+
Paralytic	575	24 (54%)	106 (72%)	445 (64%)
Non-Paralytic	307	20	41	246

KORNS AND CO-WORKERS (ages 0 to 40 years)

Paralytic Status	Total Injected	Injected Within 2 Months Before Onset	No Injections Within 2 Months Before Onset
Paralytic	1,339	188 (75%)	1,151 (64%)
Non-Paralytic	706	62	644

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* Data for "injections at onset" or "unknown" omitted from this table.

myelitis. Anderson and Skaar's analysis[1] of a group of patients under two years of age suggested that spinal paralysis was more severe in patients who had onset of disease within one month after injection than it was in those in whom the disease began two to six months after injection. However, Anderson and Skaar said that "too great attention cannot be attached to the differences, as wide variations were noted in the non-immunized and in those immunized before 1946." In Lieben's [17] data there was a larger proportion of cases with spinal paralysis among patients who had had injection within the month preceding onset, but the numbers were small.

McCloskey[20, 21] reported increased severity of paralysis in inoculated limbs as compared with the severity of paralysis of similar sites in non-inoculated children of the same age. Employing two muscle grading examinations from one to three months and from six to eight months after onset, Korns and co-workers[14] studied the severity of paralysis by age groups and injection histories for 1,004 patients. Their results were "not striking or completely consistent, but there is some trend toward greater severity of paralysis following injection."

Distribution of Paralysis. This feature has been studied in patients recently injected and compared to those with preceding injections. Four papers[1, 2, 10, 13] presented data on the incidence of arm paralysis in apposition to injection history. The findings in all four reports were similar. The material of Anderson and Skaar[1] is presented in Table 5 to illustrate this finding. In the group inoculated in the month preceding onset there was a significantly larger number with arm paralysis than in the group with injections in the preceding two to six months. In addition, Hill and Knowelden,[13] Martin,[19] Geffen,[9] and Freeman[8] noted a higher incidence of paralysis of the left arm than of the right.

Two papers analyzed the incidence of paralysis in legs of patients recently injected in those sites compared with the incidence in patients with leg injections in more remote months. One report[10] indicated no difference with regard to the interval from injections to onset, while the other[14] recorded findings similar to those noted above for arm paralysis.

TABLE 5*.—*Patients with Paralysis of Certain Localities According to Date of Onset After Antigen Injection. Patients Under Two Years of Age. Minnesota—1946.*

Mo. Post-Immunization	No. of Cases	Arm Paralysis	Leg Paralysis
1st	19	14 (74%)	8
2nd	6	1	5
3rd	8	2	6
4th	2	1	1
5th	2	0	1
6th	1	0	1
2nd-6th total	19	4 (21%)	14
Immunized before 1946	15	5 (33%)	12
Never immunized	31	4 (13%)	22

* From: Anderson, G. W. and Skaar, A. E.: Poliomyelitis occurring after antigen injections, Pediatrics, 7:741-759, June 1951.

Thirteen investigators gave data regarding the site injected apposed to data on the site paralyzed and noted the time periods between injection and onset. The findings in nine reports were similar. Table 6 presents data from Hill and Knowelden's report to illustrate this observation. Eighty-one per cent of the children who had had injection in the month prior to onset of the disease had paralysis in the limb of injection, although not necessarily confined to it. In the groups of patients who had had injection more than a month before onset of disease, a smaller proportion—from 25 per cent to 15 per cent for different time intervals—was noted. In one report,[11] which gave data on injections for only one month preceding onset, the findings did not agree with the others in this respect.

POSSIBLE CAUSES OF A RELATIONSHIP

Materials Injected. There has been considerable discussion as to the mechanism or cause of the relationships noted in previous paragraphs. The first studies by British and Australian observers concerned injections of immunizing antigens. Later reports included observations on the injection of penicillin and other materials. No single agent has been implicated as the cause of this association, although a number of materials, even procedures, have been studied. The nature of various studies of this kind and the names of the investigators are shown in Table 7. Diphtheria toxoid and pertussis vaccine, either alone or in combination, have received the most study, although other combinations of immunizing agents also have been investigated. Penicillin has received consideration as well as a number of other injections. Two procedures, venipuncture and lumbar puncture, have been studied in this respect.

TABLE 6*.—*Sites of Paralysis in Relation to Site of Last Inoculation. Children Under Two Years of Age.*

Site of Paralysis in Relation to Site of Inoculation	Interval from Last Inoculation to Onset of Poliomyelitis (Months) 0 —	1 —	3 —	6+	Total
Same site†	11	3	1	1	16
Included site†	18	1	3	4	26
Different site	3	8	10	24	45
No paralysis	1	2	1	1	5
No record	3	2	1	3	9
Total No. of children	36	16	16	33	101‡
Per cent of total falling in same and included categories	81	25	25	15	42

* From: Hill, A. B. and Knowelden, J.: Inoculation and poliomyelitis, Brit. M. J., 2:1-6, July 1, 1950.

† "Same site" denotes that the site of inoculation was the only site of paralysis, "included site" that the site of inoculation was one of the sites of paralysis but not the only site in which paralysis occurred.

‡ The total number of children was 100, and the extra one here is due to the fact that one child was given two antigens on the same day, one into the left arm and the other into the right, and developed paralysis in the right arm ten days later. Here and elsewhere, it was necessary to include this case twice.

Route of Injection. Bousfield[3] suggested that the route of injection may be important. Intramuscular injections might be more likely to be associated with subsequent paralysis than might subcutaneous injections.

Sensitization. That prior injections might lead to sensitization as the conditioning factor was considered by Martin.[19] However, he noted that six cases, of the seventeen he reported, occurred after the first injection. In the data of Anderson and Skaar[1] it was observed that approximately the same proportion of

TABLE 7.—*Types of Materials or Procedures Noted with Interval of Less Than One Month from Injection to Onset of Poliomyelitis. Selected References 1950-1952.*

Material¶ or Procedure	Author: Anderson & Skaar	Korns, et al*	Goerke†	Illinois Dept. P. H.	Lieben	Greenberg, et al‡	Martin	Geffen	Hill & Knowelden	Freeman§	McCloskey	Banks & Beale	McLoed	Total	
Diphtheria toxoid	x	x	x	x	x	x	x	x	x	x	x	x	x		13
Diphtheria toxoid alone	x		x	x	x		x	x	x	x	x	x	x	11	
DP	x						x	x	x	x	x	x		7	
DPT	x	x	x	x	x	x								6	
DT	x	x												2	
SDP	x													1	
SDT	x													1	
SDPT	x													1	
Pertussis vaccine	x	x	x	x	x	x	x	x	x	x	x	x			12
Pertussis vaccine alone	x				x		x	x	x	x	x	x		8	
DP	x						x	x	x	x	x	x		7	
DPT	x	x	x	x	x	x								6	
SDP	x													1	
SDPT	x													1	
Tetanus toxoid	x	x	x	x	x	x									6
DPT	x		x	x	x	x								5	
Tetanus toxoid alone			x	x	x									3	
D-T	x	x												2	
SDT	x													1	
SDPT	x													1	
Penicillin		x	x	x		x	x								5
Others		x	x	x	x					x					5
Schick test										x				1	
Smallpox		x	x	x	x									4	
Rocky Mt. spotted fever vaccine					x									1	
Globulin		x		x										2	
Hormones and vitamins		x												1	
Anti-allergic			x											1	
Lumbar puncture			x											1	
Menstrual injection			x											1	
Novocain		x												1	
Sedative		x												1	
Venipuncture		x												1	
Unknown			x											1	

* Data on injections collected for two months period prior to onset.

† Data on injections collected for period 0-34 days prior to onset.

‡ Data grouped in report for Diphtheria toxoid, Tetanus toxoid, Pertussis vaccine alone or in combination.

§ Two cases had an interval between 30 to 60 days between injection and onset.

¶ Abbreviations: S = Smallpox vaccine; D = Diphtheria toxoid; P = Pertussis vaccine; T = Tetanus toxoid.

cases (27 per cent) occurred after the first injection in the one-month group, as in the two- to six-month group (25 per cent).

Non-Specific Effect of an Injection. Other hypotheses consider that the local trauma of an injection may lead to activation of latent infection[20] or to localization of active infection.[5] Milzer, Weiss and Vanderboom[23] reported that mice infected intracerebrally with the Lansing strain of poliomyelitis virus had a significantly decreased incubation period after the intraperitoneal injection of pertussis vaccine and diphtheria toxoid, either alone or combined. A Salmonella typhimurium vaccine gave the same results, but penicillin did not. This work confirmed an earlier report of similar findings by Findlay and Howard[7] who used an intravenous administration of typhoid-paratyphoid A and B vaccine, pertussis vaccine or diphtheria-pertussis combined. Another approach was reported by Dean, Cohen, and Dalldorf.[5] They injected different vaccines into the left front leg of mice that had been intracerebrally infected with the mouse encephalomyelitis virus. Pertussis vaccine alone or in combination was followed by paralysis in the injected limb with a frequency seven or more times greater than expected. Diphtheria-tetanus precipitated toxoid had less effect, and typhoid-paratyphoid vaccine had none. They noted that the frequency of paralysis, regardless of location, was not increased by the injection of vaccine.

Introduction of Virus. After reviewing the evidence, Faber[6] concluded that this phenomenon may be due to the introduction of virus into the peripheral nerves from the patient's own skin or from contaminated needles or syringes during the procedure of an injection. He based the conclusion on the observations that: "(1) the onset of symptoms and paralysis has regularly occurred after an asymptomatic interval corresponding with the established incubation period of poliomyelitis; (2) the mean and median intervals appear to be longer for injections into the leg than into the arm in harmony with the greater length of peripheral nerve to be traversed by the virus; (3) the cases appear to be identical in essentials with those following immunizing injections of virus known to have been in active form; (4) the same picture has been experimentally reproduced in monkeys by inoculation into peripheral nerve, as well as into muscle."

In view of this conclusion, Faber[6] suggested that syringes and needles used for injections should be previously sterilized by autoclaving or boiling. Also, he felt that a strong antiseptic, in particular 2 per cent tincture of iodine, should be used on the patient's skin and on the vial prior to injections.

DEGREE OF RISK INVOLVED

Age. There are some data which pertain to the measurement of the hazard involved by such an association. The British and Australian reports on studies of immunizing antigens noted the evidence for relationship mostly in children under five years of age and particularly in those under two or three years. Later studies confirmed the findings for this age group while adding a considerable number of observations on children up to eight or ten years of age. Korns and co-workers[14] published observations on persons up to 40 years of age and, with data adjusted to compensate for age differences, noted that "12.9 per cent of the poliomyelitis cases had received some type of injection during the two months as compared to 6.1 per cent of the household associates and 6.1 per cent of the extrahousehold associates."

Duration of Effect. The duration of this relationship has been considered. No evidence has been recorded that injections carried out three months or more before the onset of illness had any effect upon the frequency or localization of paralysis. The data presented by Korns and co-workers[14] indicate that the risk of getting paralytic poliomyelitis is doubled during the two-month period after an injection of an antigen, or of penicillin, or any of several other substances. Their finding of an extension of the hazard through the second month prior to onset was not in accordance with observations by other investigators. However, their history data were collected only for the two-month period prior to the onset. Therefore, before publishing their report they examined immunization records of health departments in two counties and cross-checked them with reports of poliomyelitis in an attempt to verify the reliability of their other data. While the numbers noted were too small for statistical significance, the additional data tended to conform with that of the original study. All other reports have indicated that the risk was limited to the period of one month after injection.

DISCUSSION

While interest in this problem has been most pronounced since 1950, two earlier accounts of somewhat similar findings may be noted. Lambert[15] reported an epidemic of poliomyelitis which occurred in 1932 during a campaign for the treatment of yaws that was conducted in the western Samoan Islands. During the period when paralyses were evident, 7.8 per cent of 1,766 children under five years of age who had been given injections were paralyzed. Some of the patients—the number was not stated—were examined by the chief medical officer. All patients so examined had paralysis in the lower limbs and all had had injection of an arsenical substance into the buttocks. The natives were said to have had the "mistaken" idea that the paralysis of poliomyelitis was due to the anti-yaws injections. The author felt that the paralyses and injections could not be related, since almost every child from the ages of several months to adolescence received injections. In 1935 Leake[16] reviewed twelve cases of poliomyelitis following subcutaneous or intracutaneous injections with poliomyelitis virus vaccines. Paralysis was frequently noted, first in the inoculated limb. The interval from the first or only injection to the onset of disease ranged from six to fourteen days.

The evidence for association of a particular kind of injection has been most clearly shown for antigen injections. Conflicting data have been reported on the possible association with penicillin injections. Paul[24] has suggested that the recognition of this relationship may prove of importance in its bearing on knowledge of the pathogenesis of poliomyelitis.

While the data of Korns and co-workers[14] suggested that the risk of contracting recognizable poliomyelitis is twice as great for two months after an injection, the actual number of cases which might be defined as "associated" was small. Greenberg and co-workers[10] commented that for infants under one year of age, while the risk from "injections with DPT [diphtheria-pertussis-tetanus] is scientifically a true one, in practice it is more academic than real." Korns and co-workers[14] said that "the exact hazard in terms of increased risk of poliomyelitis after injections should be defined more accurately and further evaluation of the practical importance of this phenomenon in public health practice is needed."

The lack of uniformity in methods used to collect and to present the observations made comparisons difficult. For future studies to determine the extent of the problem and the measure of the risk, it has been suggested[13, 14] that, ideally, a progressive study is needed wherein the incidence of poliomyelitis in large numbers of children who have been injected with known materials at specific times can be compared with incidence rates of a comparable group who did not have injections.

For the present, the statement issued by the California State Department of Public Health in 1951[12] appears to be still reasonable: "Because of the size of the state and the variability of local conditions no statewide recommendations are applicable to every local situation. Where a local epidemic is thought to exist, the calculated risks from parenteral injections must be assessed, and it may be advisable to defer immunization as well as elective procedures."

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Possible Home Care in Poliomyelitis

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• Three main problems in providing adequate home care must be solved: (1) the obtaining of necessary equipment for the patient such as bed, chair, hot pack materials, appliances and exercising apparatus; (2) the training of some responsible member of the family in the care that is required for the patient; and (3) the provision of adequate supervision by the physical therapist and the physician.

The provision of these needs requires proper organization of all the persons and agencies in the community that have a contribution to make toward this care.

THE AIM OF ALL therapy provided for a patient with poliomyelitis is to return him to his home and permit him to resume regular activities as soon as possible. Obviously, the patient's immediate safety must be considered—factors such as the possible need for a respirator—and his long range chance for as complete recovery as possible must not be jeopardized.

Most patients with a clinical diagnosis of poliomyelitis are hospitalized during the acute stage of the disease. This is certainly desirable, as it permits confirmation of the diagnosis and adequate observation during the stage of the disease when a respirator or other equipment and procedures available only in a hospital may be needed. Moreover, while in the hospital the patient may be started on a program of hot packs, hydrotherapy, physiotherapy, exercises, and other rehabilitative measures under expert and continuous supervision before he is returned to his home.

Greater use should be made of the period of hospitalization to teach and instruct the person who will be the home attendant in the care of the patient. Too often the mother of a child with poliomyelitis is given no instruction at all or is brought in for a few minutes on the last hospital day, permitted to watch one application of hot packs and perhaps see one physical therapy treatment, and then is handed a confusing array of wool cloth pieces of various shapes and sizes and told to continue the same treatment at home. Although it would be perhaps somewhat troublesome for the hospital staff, in many cases the mother could actually be brought into the hospital for several hours on successive days and work with the hospital staff in learning to care for the patient.

The bed that the patient will return home to is the first item of equipment to receive attention. If the patient has severe involvement, consideration should be given to renting a hospital bed. In any event, a plywood board should be placed between the mattress and springs to provide a firm, level surface. If a regular home bed is used it should be a single bed and should be elevated on blocks to a height that requires least effort and strain for the attendant. Care must be taken that the bed will not fall off the blocks. A footboard 18 to 24 inches high should be wedged against the bed frame by two 4 x 4 x 4-inch blocks so that when the patient is in the supine position the weight of the bed clothes will be kept off the upturned feet and when the patient is prone the feet may rest at right angles to the legs in the depression between the footboard and mattress. If packs are to be given, the bed clothes should be of light wool for warmth and dryness, and some sort of waterproof rubber or plioform sheet should be available to protect the bed clothes and mattress. For the patient who can use it, a trapeze suspended from an overhead frame within reach of the arms will make the patient more independent and help the attendant.

Hot packs are used very successfully for the home-treated patient, and a large pan for heating the wet packs and a regular washing machine wringer for wringing them out is the equipment most commonly used. The only requirements are that the packs be applied hot and moist but not dripping. Packs are often sent home with the patient from the hospital. If not, the attendant must be instructed as to the size and shape of packs required. Army surplus wool blankets make good packs.

For most patients, packs from the base of the skull to the heels one or more times a day will be useful. For such packs, applied with the patient prone, no special fitting of the wool cloth is necessary. Hot tub soaks will be substituted for the packs in many cases and no special equipment is needed except perhaps a wheel chair or an ordinary house chair fitted with casters for moving the patient from the bed to the tub. For a small child a bathtub is adequate for regular hydrotherapy such as underwater exercises.

A larger child or an adult can receive the benefits of exercise with the pull of gravity neutralized by the Guthrie-Smith apparatus or some modification

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of it. This apparatus can be built at home by a person with a few tools and ordinary skill under the direction of a physical therapist. Briefly, it is a system of springs, pulleys, and slings suspended from an overhead frame and tailored to the requirements of the particular limb or limbs that are to be exercised. It can be used to neutralize gravity quite effectively or to provide spring resistance for muscle groups. Its use must be under strict supervision of the physical therapist, particularly at the start, or the patient may substitute different muscle groups for the ones it is desired to strengthen, and thus develop harmful substitution patterns. With proper supervision and careful checking at each visit, the physical therapist can prevent this.

Other types of equipment can be obtained or improvised—things such as "blow bottles" for exercising the muscles of respiration, shoulder wheels made from a bicycle wheel, tricycles, etc.

The total home care of the patient and the use of the various types of equipment so briefly outlined above is, of course, based on the availability of the services of at least three key people, the home attendant, a physical therapist, and a physician. Others who should be included are a public health nurse or visiting nurse and an occupational therapist.

When the patient is a child or the husband, the home attendant will probably be the housewife, and as the duties to the patient will be in addition to other homework, she will have to be strong and resourceful. Sometimes outside help is essential because the housewife cannot carry the double load or is, herself, the patient. Generally, practical nurses who are willing and strong can be taught to do a good job and in many cases can work with a child patient better and more effectively than can the mother. Often, only four hours a day of outside help will be sufficient.

The home attendant works mainly under the supervision of the physical therapist on a definite daily schedule of packs, hot baths, joint motion, exercise, or whatever routine has been ordered by the physician. It is essential that the physical therapist make home visits and treat and teach at the bedside at least at the start of the home care program. After the patient is started on the routine and it is ascertained that the home attendant is applying the packs, and carrying out motions and exercises correctly, one to three visits a week by the physical therapist to check the procedures, to note progress and to observe the need for changes in the routine may be sufficient. As a matter of fact, the medical decision as to whether one to three visits per week by the physical therapist will meet the needs of the patient is the biggest factor in determining whether or not the patient can be moved home. It is not practical to provide more frequent visits by the physical therapist except perhaps for temporary periods. The importance of a definite daily schedule or routine for the patient should be emphasized. If home care is not done on a definite schedule, the chances are it will not be done at all or will be ineffective.

As soon as the patient is able, depending on his involvement and progress, he can be brought into a physical therapy center or office for outpatient care and supervision of the treatment being carried out at home. This, of course, enables many more patients to be supervised by a physical therapist than is possible on a total home care program.

Medical supervision of the patient at home may come from a variety of sources. Orthopedic supervision is obtained on an individual basis or perhaps more often through a special orthopedic clinic either at the hospital or in the local community, such as a crippled children's clinic. Orthopedic supervision need not be dwelt upon because it is almost always obtained for the patient. However, the author believes that general medical care of the patient at home is often neglected. Patients with poliomyelitis often are extremely nervous and have difficulty sleeping. Their appetite is sometimes poor and nutritional habits faulty. Some patients gain so much weight that it definitely interferes with recovery. Almost all of them at one time or another have problems of elimination—constipation, difficulty in emptying the bladder, or incontinence. These problems are often overlooked because of preoccupation with orthopedic problems.

A public health nurse or visiting nurse can be of great help to the patient and home attendant by teaching and demonstrating bedside nursing procedures, advising regarding dietary requirements, and assisting with other health and nursing problems in the home. A public health nurse can work very effectively with the physical therapist in bringing to the home patient the services ordered by the physician in charge.

HELP FROM PUBLIC AGENCIES

Home-care for patients with poliomyelitis requires a certain amount of organization of the various agencies and individuals involved if the best results at the least cost are to be obtained. In addition to physicians, physical therapists, public health nurses, appliance makers, and perhaps others, there are the various agencies such as the National Foundation for Infantile Paralysis, the local health department, the Crippled Children's Services, and perhaps the welfare department. If a patient of school age must remain long at home, the school department may have to provide a home teacher. In some cases, the Bureau of Vocational Rehabilitation will be called in. It is obvious that the efforts of all these people and organizations must be coordinated to help the patient get what he needs when he needs it. Whether in epidemic years or years of normal incidence of the disease, there seem to be enough cases of poliomyelitis in most communities to strain the facilities available during the summer and fall. Even patients with sufficient private means to pay their own way often receive advice and services from the community agencies.

The pattern of organization or coordination may vary considerably from place to place. In Richmond and Contra Costa County the health departments through the Crippled Children Services, working closely with the local chapter of the National Foundation for Infantile Paralysis, has evolved a practical program. When the patient returns from the hospital, the services of a physical therapist are supplied by the National Foundation chapter. After obtaining the physician's instructions the physical therapist and the public health nurse see to it that the necessary equipment is obtained and help the home attendant learn the routine of home care. Some equipment owned by the National Foundation chapter is available on a loan basis. The services required of other agencies are called for by the health department or by the physical therapist as the needs arise. Outpatient physical therapy centers operate in three parts of the county. Patients not under the private care of an orthopedic surgeon are usually cared for by an orthopedist at one of the regular Crippled Children Services clinics. The physical therapist also attends these clinics to report her observations to the physician and receive his instructions.

In the interests of economy and the welfare of the patient, a well organized system of services for home care of the poliomyelitis patient is essential.

Richmond City Hall.

Medical Economics

Oranges, grapefruit, peas, olives, walnuts and tumors are of various size. In the interest of precise verbal description, therefore, it would seem to be a good suggestion that physicians familiarize themselves with the language of greengrocers in order that they may state the size of a tumor with an exactness becoming to fellows of science.

The less than precious description, "the size of a grapefruit," then would give way to the eminently more precise "the size of a two-for-a-quarter grapefruit." Thenceforth, readers of medical literature who kept themselves reasonably well informed upon conditions in the citrus fruit market would have little difficulty in determining an author's meaning. To them it would be but child's play to calculate that, at today's prices, the tumor was, to put it in their own simple words, 10 cm. in diameter.

Since rising commodity prices must, in this order of things, make two-for-a-quarter tumors smaller and smaller, it is conceivable in the newer economic thinking of our day that tumors might somehow be inflated out of existence.

The Small Hospital's Role in Poliomyelitis

EDWARD B. SHAW, M.D. and H. E. THELANDER, M.D., *San Francisco*

• *Medical skills should be developed by the staffs of smaller hospitals for the differential study of patients with symptoms resembling those of poliomyelitis in order to provide the rudiments of care for the occasional patient with mild poliomyelitis, to recognize the indications which point to the necessity of superior technical assistance, and to decide when it is appropriate to move patients to better equipped centers.*

The impetuous acquisition of mechanical aids for the treatment of special problems will be effective in small communities only to the extent that this equipment is kept serviceable and is operated by persons of sufficient skill. Epidemic situations in a small community can be met only by mobilization of facilities under adequate direction and by integration of care with that provided by larger treatment centers.

Sporadic poliomyelitis is to be expected in all communities from time to time. Some cases will completely escape detection, many will be mild and equivocal, and a few may present problems which might tax the facilities of the best equipped centers.

Epidemics of this disease are completely unpredictable and an area which has enjoyed relative freedom for many years may be the site of this year's epidemic. Small communities sometimes encounter a case incidence which would be overwhelming even to a well prepared urban center.

The problem for the smaller hospital is whether every patient in whom the diagnosis is even suspected should immediately be transferred to a center for the care of this disease or, conversely, standby facilities should be provided for any eventuality in the management of the individual cases or of an epidemic situation.

The former course involves an impatient avoidance of responsibility for the diagnosis of the disease and the immediate care of patients. Especially will this course put upon major treatment centers an impossible load, including patients with all manner of conditions which may be confused with poliomyelitis together with patients who have dubious or extremely mild cases and for whom perfectly adequate treatment can be afforded with minimal facilities.

Protection of the community and the ultimate welfare of the patient do not demand that the diagnosis always be established at the earliest possible moment. (As regards the welfare of the patient, this situation would be changed, of course, by the discovery of a specific method of treatment.) There need be no great risk to the institution in the acceptance of patients suspected of having poliomyelitis, provided reasonably well defined precautions are observed. Along with suspected cases there are probably others with less convincing symptomatology in which contact communicability is equally great. In general, communicability is low and the hospital need not be motivated by local hysteria to refuse all suspects.

The latter course—to attempt to provide complete care in every small community—is wasteful of time and effort. It may be relatively easy for the hospital to finance the purchase of hot pack machines, respirators of one sort or another, and all manner of mechanical equipment; but it is not easy at all times to provide adequately trained personnel for the operation of these devices. It should be an absolute rule that mechanical equipment ought never to exceed the skill and availability of those who are to operate it. There is the further necessity that repair and servicing of apparatus be constantly maintained. Elaborate preparation for every eventuality in patient care is an uneconomic approach to the problems of the small institution.

The prime requirement is that there should be available a nucleus of physicians with sufficient interest, training, and experience to be able to carry out clinical and laboratory studies on patients suspected of the disease, in order to arrive at a working diagnosis and a plan of management. There are ample opportunities provided by the National Foundation for Infantile Paralysis and by state boards of health for those who are interested to get enough training to make this possible, and public concern is such as to stimulate this effort.

Patients in whom the diagnosis of poliomyelitis is suspected may be divided into groups:

1. Those in whom an alternative diagnosis and an appropriate plan of care may quickly be determined upon.

2. Those who have equine encephalomyelitis and similar diseases of the central nervous system which may be distinguished from poliomyelitis only by

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careful observation but in which the symptomatology is not sufficiently urgent to impose the need for more than careful study in arriving at a diagnosis and a plan of management.

3. Those who have mild poliomyelitis in which the diagnosis may be difficult to establish but in which simple measures may be entirely adequate and in which the necessity for more complicated treatment may be anticipated by extremely watchful observation.

4. Those in whom the diagnosis is readily established and with regard to whom the clinician must determine whether local facilities are adequate or transfer to a treatment center with more extensive equipment and personnel is necessary. Such a decision is complicated by an opinion, frequently expressed, that in a large proportion of cases patients with manifest poliomyelitis had best not be disturbed and should not be traumatized by transportation over great distances. This decision involves a calculated risk in which all the factors serving the ultimate safety of the patient should be carefully considered. There are certainly cases in which the probable termination of the disease is death and in which only the maximum of skill will provide optimal chances for recovery of the patient.

In very few cases in which the clinical diagnosis can be established with certainty will the patient completely escape paralytic sequelae, and in many such instances the end result will be greatly affected by the quality of care. Details of treatment need not always be intricately contrived but must certainly include adequate rest, the use of measures to alleviate pain and muscle spasm. the avoidance of overstretching or contracture of involved musculature. judicious manipulation to overcome muscle spasm, and the guarded resumption of activity and ambulation.

The most elaborate measures may not prevent profound disability in some patients, but even patients with mild forms of the disease are not well served by inexpert and desultory care. In mild cases meticulous attention to detail may make the difference between complete functional recovery and crippling after-effects.

The medical care of patients with poliomyelitis, wherever afforded, must meet the problems of the individual patient — problems which may involve almost every area of medical skill. It is possible, although not without some difficulty, to compensate for the lack of facilities of personnel and equipment by infinite pains in medical attendance of each patient.

That there should be some mistakes in diagnosis, prognosis, and in management is implicit with the nature of the disease. Even clinicians of considerable experience may make such errors. A physician who assumes responsibility for the care of a patient must be alert to the danger signals which may indicate the necessity of securing technical assistance beyond his own accomplishments.

When the number of cases is greatly increased the burden assumed by the hospital will depend upon the amount of medical skill that can be mobilized to meet these needs. It is incumbent upon those concerned with medical problems to direct and to expand nursing care. physical therapy and other ancillary services to meet the case load which may be assumed.

3641 California Street.

CASE REPORTS

- ***Tuberculous Mediastinal Lymphadenitis and Erythema Nodosum Simulating Polyarteritis Nodosa***
- ***Thrombocytopenic Purpura, Pregnancy and ACTH***
- ***Interscapular Hibernoma—Report of a Case with a Brief Review of the Literature***

Tuberculous Mediastinal Lymphadenitis and Erythema Nodosum Simulating Polyarteritis Nodosa

JOHN J. GILRANE, M.D., and
CLIFFORD B. CHERRY, M.D., *Los Angeles*

BIZARRE FORMS of tuberculosis, in particular extrapulmonary tuberculosis, are rarely seen nowadays in the United States, probably owing to the lower incidence of all types of tuberculosis, improved methods leading to early diagnosis, and possibly to more effective treatment. Erythema nodosum still occurs with relative frequency in the Scandinavian countries, although why this should be so is not apparent.

The following report of a case of tuberculous mediastinal lymphadenitis and erythema nodosum is presented because the clinical manifestations simulated those of polyarteritis nodosa and gave rise to speculation as to the pathogenesis.

REPORT OF A CASE

On Aug. 31, 1948, a 30-year-old Caucasian man was admitted to St. Vincent's Hospital, Los Angeles, with complaint of edema and aching of both ankles. While in England in 1945, the patient had had "primary atypical pneumonia" accompanied by pleural effusion of the right side. In 1942 an intracutaneous test with tuberculin had been carried out and there was positive reaction. The patient's mother had had excision of tuberculous cervical nodes in 1938. In the present illness, which had begun about a month before admittance to hospital, the patient had noted, in addition to the aching and edema of the ankles, an erythematous, nodular, and slightly tender eruption of the skin over the lower one-third of both legs, mild dyspnea upon exertion, intermittent respiratory wheezing, and a non-productive cough which had grown worse over a period of four months.

The patient was well developed and appeared to be well nourished. The temperature was 99° F., the pulse rate 76 per minute, respirations 20 per minute, and the blood pressure 150 mm. of mercury systolic and 102 mm. diastolic. Scattered high-pitched rhonchi on inspiration and expiration were noted throughout both lung fields. There was three-plus pitting edema of the ankles and feet and a faintly tender nodular eruption over the lower third of both legs. The nodules, a faint violaceous red, appeared to be in the dermis. Except for the elevation of blood pressure, no abnormalities were noted in the cardiovascular system.

Reaction to a skin test with purified protein derivative No. 1 was faintly positive, to a coccidioidin skin test negative. Several specimens of the output of urine over 24-hour and 72-hour periods were examined. No acid-fast organisms were noted on smears, none grew on cultures, and results of guinea pig inoculation were negative. Complement fixation and precipitin reactions for Coccidioides immitis were likewise negative. In an anterior-posterior x-ray film of the chest both lung fields were observed to be clear, but there was some increase in bronchovascular markings. An electrocardiogram was normal except for sinus tachycardia. The hemoglobin content of the blood was 12 gm. per 100 cc. Erythrocytes numbered 6,200,000 per cu. mm., and leukocytes 11,600—23 per cent of them lymphocytes, 11 per cent monocytes, 2 per cent eosinophils, and 64 per cent neutrophils, of which 11 per cent were banded forms. The sedimentation rate (Westergren) was 63 mm. in one hour. The specific gravity of the urine was consistently 1.021 or more, and in an Addis test the urinary cell count was well within normal limits.

In the next two months the edema and skin eruption largely subsided, but when the patient was ambulatory or active the edema recurred and new crops of nodules appeared on the legs.

Two and a half months later, a report on biopsy specimens of skin and subcutaneous tissue taken from an involved area on the left leg was, "Non-specific arteritis resembling the involuting phase of polyarteritis nodosa." Several pathologists reviewed the specimens and all concurred in the diagnosis, except one who ventured an opinion of Boeck's sarcoidosis. The patient was advised to enter the hospital for investigation, but this he did not do until February, 1949.

On Feb. 13, 1949, the patient was readmitted with complaint of severe retrosternal and left shoulder-tip pain with paresthesia along the ulnar aspect of the left forearm and hand of five hours' duration. There had been similar bouts of less severe precordial pain lasting from two to three hours during the preceding two months. Edema and aching in the legs were still present. Nodules had reappeared on the anterior tibial surfaces of both legs. The clinical impression at this time was that the pain was caused by coronary arteritis with or without myocardial infarction as a result of polyarteritis nodosa. Serial electrocardiograms were made. One, taken six hours after admittance, was normal; in one taken on the fifth day of hospitalization there was evidence of posterior myocardial wall damage. In none of them, however, was there classical evidence of myocardial infarction. By the 22nd day the tracings were well within normal limits. During the first ten days, retrosternal pain recurred intermittently. In an x-ray film of the chest, definite widening of the upper mediastinum on both sides, greater on the right, was noted. In fluoroscopic examination, what appeared to

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From St. Vincent's Hospital and the University of Southern California School of Medicine, Los Angeles.

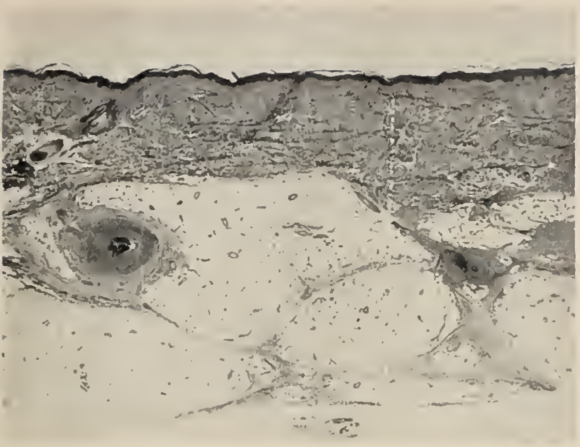

Figure 1.—Areas of involvement of epidermis and dermis (low power magnification).

be a tumor of the anterior mediastinum, lying to the right of the ascending aorta and not displacing the trachea, was observed. It was the opinion of a thoracic surgeon who was consulted that the mass was a large inflow tract (superior vena cava) consistent with the large build of the patient. Five weeks after admittance the patient was discharged, free of pain and with the dermal nodules on the legs almost cleared.

In the next nine months there was gradual clinical improvement, although the blood sedimentation rate remained between 28 mm. and 42 mm. in one hour. Pronounced fatigability also was noted and there were mild intermittent recurrences of ankle edema with a few scattered nodules on the legs. Specimens of skin, subcutaneous tissue and muscle were again examined and changes consistent with involuting polyarteritis nodosa were reported. The patient was given cortisone therapy from Jan. 25, 1950 to June 26, 1950. A total of 7.21 gm. of the hormone was given in that period. During this therapy the blood pressure rose from a pretreatment level of 135 mm. of mercury systolic and 98 mm. diastolic to as high as 178 mm. systolic and 120 mm. diastolic.

On April 24, 1950, the patient returned to the hospital with renal colic which was found to be caused by uric acid gravel secondary to hyperuricemia, probably as a result of cortisone. A second test with purified protein derivative No. 1 was carried out in May 1950, and the reaction was three plus, just short of necrosis. In an x-ray film taken at this time, slight change in the hilar outlines was observed. Soon afterward, a firm, discrete supraclavicular lymph node was noted for the first time and a specimen was removed for biopsy. Pathologic changes observed in it were reported typical of tuberculous lymphadenitis, including caseation. At autopsy of a guinea pig that was inoculated with material from the node, tuberculous lesions were noted.

The patient was then admitted to Barlow Sanatorium. During 90 days of modified bed rest and therapy with dihydrostreptomycin and paraminosalicylic acid the mediastinal shadow gradually diminished. No pathogenic organisms were observed in preliminary and follow-up examinations (including guinea pig inoculations) of specimens of sputum, gastric washings and urine. In repeated studies there was no evidence of activity to support the original diagnosis of polyarteritis nodosa. When last observed, the patient was well except for mild hypertension.

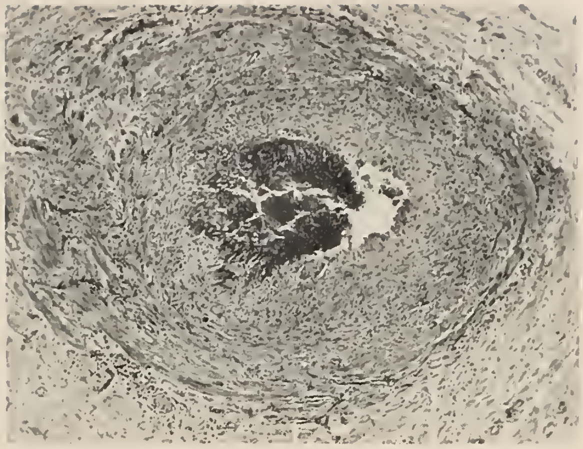

Figure 2.—The arteritis of the larger vessel seen in Figure 1 with a partially occluding thrombus.

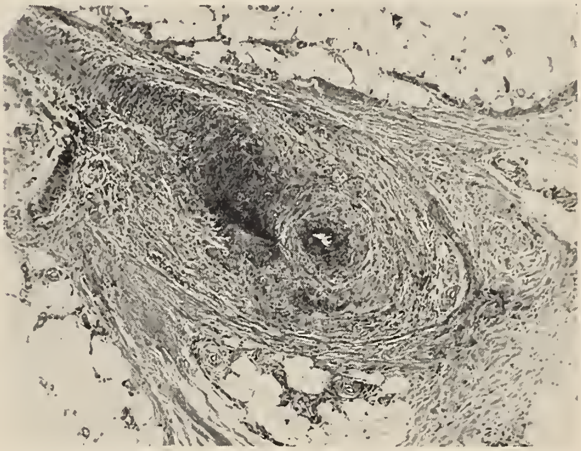

Figure 3.—The arteritis of the smaller vessel seen in Figure 1.

DISCUSSION

As time passes, the feeling is becoming more prevalent that polyarteritis nodosa is a generic entity with a variety of causes, all stemming primarily from hypersensitivity. Moreover the changes are at times pleomorphic. Arkin[1] in 1930 divided the lesions into four stages: the degenerative, acute inflammatory, granulation, and finally healed granulation tissue stage. The lesions in the various stages may vary broadly—from those resembling the lesions of the non-specific entity, nodular vasculitis on the one hand, to almost full-blown erythema induratum or other arterial lesions at the other extreme. Both polyarteritis nodosa and erythema nodosum, which is basically vasculitis, often have similar morphological criteria—lymphocytic, eosinophil, and neutrophil invasion of the vessel wall, occasional epithelioid and giant cells, thrombosis of the lumen, and, rarely, even minute foci of necrosis. The fact that polyarteritis nodosa often has many aspects in common with other kinds of vasculitis does not deny the existence of the clinical and pathological entity of polyarteritis nodosa. The point to be stressed is that the disease is not a rigidly circumscribed one, but rather a generic entity with many gradations varying from the mild to the fatal and classically described involvements, and at times easily confused with other forms of arteritis.

In the case herein reported, many of the clinical features of polyarteritis nodosa were present, and there was even biopsic evidence of the disease; yet some of the cardinal features were absent. At no time was renal, hepatic, splenic, or central and peripheral nervous system involvement observed. There is good reason to believe that the clinical episode of coronary arteritis with the associated peculiar, evanescent electrocardiographic changes was compatible with polyarteritis nodosa. Yet upon review of the electrocardiograms and considering the patient's clinical status at the corresponding times, it seems reasonable to believe that: (a) the cause was arteritis of a posteriorly located coronary branch, a counterpart of the arteritis observed in biopsy specimens; or, (b) that a tuberculous focus within the mediastinum adjacent to the pericardium and posterior wall of the heart could produce the same manifestations.

Wallgren[4] in Sweden observed that 70 per cent of cases of erythema nodosum in children were accompanied by evidence of active pulmonary disease, hilar changes as noted by x-ray, or other lesions, mainly of the lymphatic glands. In practically all the cases the disease was of the primary infection type. In the present case, the fact that the patient had a positive reaction to a tuberculin test in 1942 indicates that he must have had the primary infection years before the symptoms of the illness for which he was treated occurred. This is not at odds with the observation of the onset of erythema nodosum with recurrent exacerbations long after the time of initial infection, possibly as a result of secondary dissemination of the initial infection, or, conceivably, reinfection. Massini and Ramel[3] expressed the belief that recurrent erythema nodosum indicates a generalization of tuberculosis, tuberculous septicemia for example. Janussion,[3] on the other hand, felt that erythema nodosum is a sensitivity reaction—to primary tuberculosis in children, and to post-primary tuberculosis in adults. On the basis of Rich's[5] work it is known that resistance and sensitivity are two separate reactions on the part of the host to tubercle bacillus infection, and that the degrees of reaction do not necessarily correspond. The tuberculin skin test is based on hypersensitivity to the tubercle protein, and apparently in similar fashion erythema nodosum eruption arises as result of hematogenous spread of tubercle protein to hypergic skin. In the present case, of course, question arises as to why the reaction to the tuberculin skin test was but faintly positive during the acute phase of erythema nodosum eruption. The energy of overwhelming infection and minimal resistance is well known, but ordinarily a tuberculin skin test in the course of erythema nodosum due to tuberculosis causes exacerbation of the eruption. However, cases of erythema nodosum in which there were tuberculin-neutralizing properties in the serum have been reported.[2] Lofgren noted that the reaction to tuberculin was often stronger during the weeks following the acute eruption than while the lesions were present. Moreover he observed that in some cases there was no reaction or only faintly positive reaction to 0.0001 mg. of old tuberculin but pronounced positive reaction to 0.01 mg. of the substance. It does not seem too much to infer that perhaps the 0.00002 mg. of purified antigen contained in the purified protein derivative No. 1 used for skin testing in the present case was not a sufficient amount to evoke a highly positive reaction and exacerbation of the erythema nodosum eruption.

It is much easier to reconcile the biopsic observations with the outcome in the present case: Acid-fast organisms did not grow on cultures of material from the lesions and were not observed in stained specimens because the lesions were purely a hypersensitivity phenomenon secondary to tubercle protein and were not caused directly by viable organisms. Rich produced sterile hypersensitivity reactions in experimentally infected animals and also induced them by the injection of fractions of the tubercle bacillus. The presence of epithelioid and Langhans' giant cells, as well as the stromal involvement adjacent to the artery, in the case here reported might lead to suspicion that the condition was of granulomatous origin, but in the absence of bacilli and with the arteritic inflammatory changes more closely resembling those of involuting polyarteritis nodosa, the latter diagnosis was more credible.

SUMMARY

A case of tuberculous mediastinal lymphadenitis with erythema nodosum simulating polyarteritis nodosa is presented. An explanation is offered to reconcile the peculiar clinical manifestations on the basis of hypersensitivity, as well as to suggest that biopsy specimens of erythema nodosum may easily be confused with those of polyarteritis nodosa, a pleomorphic and generic entity.

1930 Wilshire Boulevard.

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Thrombocytopenic Purpura, Pregnancy and ACTH

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THROMBOCYTOPENIC PURPURA, although not common, has always caused great anxiety to obstetricians faced with the delivery of a patient with the disease and to surgeons contemplating splenectomy for such a patient.

In the past, massive blood transfusions and prayer have been the only answer to the problem. Recently, as the inherent dangers of transfusions have been better recognized, there has been a laudable search for techniques in which the use of blood and plasma is less important.

In this particular disease it seems that adrenocorticotropic hormone (ACTH) and cortisone will provide the answer. In the case of a woman with thrombocytopenic purpura who was at the full term of pregnancy, the drugs were used with dramatic effect before delivery and again before splenectomy.

REPORT OF A CASE

The patient, 36 years of age, gravida II, para I, was first observed July 11, 1951, with complaint of blood in the urine, first noted by her about one month previously in association with an attack of fever and aching diagnosed as "flu" by another physician. The hematuria had persisted and in addition the patient had noted rather severe bruising over her body, the presence of innumerable petechiae, especially below the waist, and excessive swelling of the legs. She stated, however, that in general she felt quite well.

The patient said that for years she had had eczema of the face and flexor surfaces of the arms and had used a coal tar preparation called "Zetar" for the past year. She had also been taking an unknown quantity of thyroid substance for three years, three tablets of Theocalcin® daily for three years, and for the past several months a preparation containing iron and calcium. She had been told she had albuminuria at the time of her first pregnancy in 1947 and that intravenous pyelograms in 1948 were normal. The patient said that menstrual bleeding was not excessive, that bleeding from accidental wounds did not seem abnormal, and that there had been no unusual loss of blood at the time her first child was delivered. She had, however, always "bruised easily." She had had scarlet fever at age eight but no swelling or smoky urine subsequently.

The patient's grandfather had diabetes and her mother "bruised easily." None of five siblings had any bleeding tendency. One sibling had had infantile eczema; another had hay fever.

Upon physical examination, moderately severe eczematous changes of the face and arms were noted. There were many subcutaneous hemorrhages and innumerable petechiae, especially of the lower half of the body. Massive dependent edema to the level of the mid-thighs was present.

Reports on laboratory work on July 11, 1951, were as follows:

Blood: Hemoglobin content, 10.7 gm. per 100 cc.; packed cell volume, 35 per cent; platelets, 24,000 per cu. mm.; coagulation time, 11 minutes; bleeding time, over 18 minutes; clot retraction, none in five hours; prothrombin time, normal; leukocytes, 14,450 per cu. mm., made up of 78 per cent nonsegmented, 5 per cent segmented, 1 per cent eosinophils, 9 per cent lymphocytes, and 7 per cent monocytes. The urea nitrogen content was 11 mg. per 100 cc., the nonprotein nitrogen 28 mg. per 100 cc., and total serum proteins 5.0 mg. per 100 cc.

Urine: Specific gravity, 1.002; pH, 5.5; albumin, 4 plus. There was no sugar in the urine. In microscopic examination, innumerable erythrocytes were present.

The diagnosis was thrombocytopenic purpura, anemia due to loss of blood, glomerulonephritis in degenerative stage, dependent edema secondary to glomerulonephritis and aggravated by pregnancy.

The patient was admitted to hospital and was given 25 mg. of ACTH intramuscularly every six hours. The hematuria stopped and the blood-clotting mechanism reverted toward normal within 24 hours. On the sixth day the fetal sac was ruptured artificially and a 4 pound 8 ounce normal living female infant was delivered without abnormal bleeding either from the uterus or at the site of a small episiotomy. The dose of ACTH was reduced to a total of 50 mg. on the seventh day and to 25 mg. per day on the eighth day.

Results of studies of bone marrow obtained by puncture on the fourteenth and thirty-first days were identical. The hematologist reported: "Except for a slight shift to the left in the granulocyte series, both granulopoiesis and erythropoiesis were entirely normal. Megakaryocytes were abundant, many of them quite young. Many had a fine pinkish cytoplasmic granulation, but none had the normal, mature granulation of the platelet-producing megakaryocyte. Furthermore, very few were seen to be pinching off bits of their cytoplasm, and the few in which this phenomenon was seen were young forms, which were producing atypical granule-free masses of cytoplasm which could scarcely be characterized as platelets. Almost no normal platelets were seen on the smears. There was an abundance of eosinophils."

The patient was discharged on the fourteenth day with all medication proscribed in order to determine if the thrombopenia might be caused by any of the medicines previously used. On the thirtieth day she was again admitted to the hospital for splenectomy because of regression to the previous condition, with gross hematuria, massive bruising, innumerable petechiae, prolonged bleeding time, failure of clot retraction and worsening of the eczema, this time with petechial hemorrhages into the scales, causing startling raw-beef appearance. Cortisone was given, 25 mg. by mouth every four hours, and again there was a striking turn toward normal with respect to the bleeding tendency, and clearing of eczema, within 48 hours.

Splenectomy was carried out without incident on the thirty-fourth day. There was no unusual bleeding. The patient received 500 cc. of blood at the time of operation. She was given 75 mg. of ACTH intramuscularly the day before and the day after operation. Only "focal chronic inflammation, mild" was noted in biopsy of a specimen of muscle. "Chronic and acute passive hyperemia" was observed in pathologic examination of the spleen. The postoperative course was complicated by right lower lobe pneumonia which responded to the usual measures, and by severe recrudescence of eczema which gradually responded to local measures and x-ray therapy.

Dismissed from the hospital on the fiftieth day, the patient later was examined several times in the office. There was no recurrence of gross hematuria, but persistently there were 4 to 5 erythrocytes and equal numbers of oval fat bodies per high dry field, albumin content of 4 plus, and low specific gravity. When last observed December 19, 1951, the patient had no petechiae or bruises, but eczema still was present and there was moderate edema at the ankles. The number of platelets per cubic millimeter of blood was 150,000 and the clot retraction was normal. The lungs were quite clear. In repeated studies of the blood of the infant no abnormality was noted.

DISCUSSION

In any discussion of idiopathic thrombocytopenic purpura and its treatment, it must be borne in mind that many cases are acute and self-limited in a period of only a few days with or without treatment. It is to be noted also that ACTH and cortisone have not been effective in thrombocytopenic purpura when the marrow is hypoplastic or when there has been depression of platelet formation by chemical intoxication or medication.[3]

The fact that thrombocytopenic purpura responds to ACTH and cortisone raises the question as to the relation of this disease to asthma, eczema, polyarteritis nodosa and other diseases thought to be caused by allergic sensitivity and known to respond to these drugs.

Evans and co-workers[2] presented evidence for a common pathogenesis of primary thrombocytopenic purpura and acquired hemolytic anemia. Their evidence was not altogether direct, but they presented a reasonably convincing argument as to the close relationship of these two diseases, pointing out that there are patients with acquired hemolytic anemia and thrombocytopenia without purpura, another group with both acquired hemolytic anemia and thrombocytopenic purpura, and a third group with thrombocytopenic purpura and sensitized erythrocytes but no anemia. It has been possible with the Coombs test to demonstrate immunologic evidence of sensitization of the erythrocytes by an antibody active at 37° C., which is the evidence for the "allergic" basis of acquired hemolytic anemia. Similar attempts to demonstrate an anti-thrombocyte antibody in the serum of patients with thrombocytopenic purpura have been encouraging but not conclusive.

Furthermore, Bedson and Johnson[1] reported that the injection of an antithrombocyte serum into animals produced thrombocytopenic purpura and a proliferation of megakaryocytes in the bone marrow.

If there is a choice between ACTH and cortisone in the treatment of this condition, the author feels that cortisone by mouth is better because it avoids the ecchymosis caused by the needle in the parenteral administration of ACTH.

While recognizing that in the present case the combination of eczema, renal abnormality and purpura suggested the diagnosis of one of the diseases of ground substance such as polyarteritis nodosa or lupus erythematosus, such a diagnosis was not warranted in view of the pathologic report on the muscle biopsy.

SUMMARY

A case of a patient at the full term of pregnancy who had glomerulonephritis in the degenerative stage, atopic eczema of the face and arms, and idiopathic thrombocytopenic purpura, is presented.

The bleeding tendency responded miraculously two times—once to ACTH, which made uneventful delivery of a normal infant possible, and the second time to cortisone, which made uneventful splenectomy possible. The nephrotic condition and eczema remained, but the bleeding tendency was still in remission eight months after splenectomy.

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Interscapular Hibernoma—Report of a Case with a Brief Review of the Literature

JOHN RALPH MILLER, M.D., *Fresno,* and
MALCOLM B. DOCKERTY, M.D., *Rochester, Minn.*

THE OCCURRENCE, in man,[2, 4, 7, 9, 10, 15] of peculiar lipomatous tumors featuring the presence of multiglobular fat, has occasionally been reported since Merkel,[11] in 1905, recorded the first instances. It was his belief that the growth was an adenoma of sebaceous glands. Gery,[7] however, in 1914, discussing a case reported by Bonnel,[2] called attention to the rather striking resemblance of the tumor, as microscopically observed, to the so-called hibernating gland of certain winter-sleeping mammals. Gery's suggestion that the term *hibernoma* be applied to these neoplasms was well received—and perhaps fortunately so. Although perhaps incorrectly implying that the neoplasm arose from some vestigial hibernating gland in the human species, the epithet *hibernoma* was so arresting that it led to special cataloguing in the literature.

In 1949 Brines and Johnson[4] published a detailed report of an interesting example of the condition and an excellent review of hibernomas. Ten cases (including one they reported) they listed as being authentic examples; seven others they did not consider sufficiently documented to warrant inclusion among the chosen few. Since the appearance of this review, Simon[15] has described a posterior cervical tumor of like nature and Kittle, Boley and Schafer[10] have reported a mediastinal tumor of this type. In both cases the tumor apparently was a hibernoma.

Special gross, microscopic and histochemical features of these tumors have been thoroughly discussed by the previously mentioned investigators, who, along with others,[1, 3, 5, 6, 12-14, 17] have dealt at length with the histogenesis of adipose tissue and its possible functions. Likewise, the relation of normal and tumorous fatty tissue to the so-called hibernating gland has been extensively investigated. Following is a report of a case of interscapular hibernoma, the thirteenth case of hibernoma to be recorded and the sixth in which the tumor originated at this site.

REPORT OF A CASE

A white housewife, 40 years of age, was admitted to the Hanford Sanitarium, Hanford, December 10, 1950, because of a large lump between the shoulder blades. The patient had first noticed the mass about ten or twelve years previously when it began to cause some discomfort when she was lying supine. Although it never had been painful, it had become more and more awkward to the patient as it gradually increased in size. Finally, in later years, development of the mass had made resting in a supine position impossible.

The patient was well-developed and well-nourished. The body weight was 130 pounds. On the posterior part of the upper portion of the thoracic wall between the scapulae was a mass so large and so deep in position that the peripheral borders of the scapulae overrode it. This was especially true of the right scapula, which when adducted became very prominent as it surmounted the growth. On palpation, the mass was freely movable beneath the skin and scapulae. It was rather firmer in consistency than the adjacent structures.

No abnormality was noted in examination of the blood or in urinalysis.

In view of the duration, size, shape, mobility, consistency, and position of the mass, it was thought to be a large lipoma. At operation the lesion was observed to be a large, firm, circumscribed, discoid, golden-yellow mass which was situated in the subcutaneous tissue. It had pushed the trapezius muscle aside in such a manner that the right margin of the muscle lay beneath the scapula. A lateral projection of the tumor extended into the axilla. Some portions of the attachments to adjacent tissues were very vascular. The tumor was removed completely except for the portion which had extended into the axilla. The operative wound was closed with little difficulty. The postoperative course was

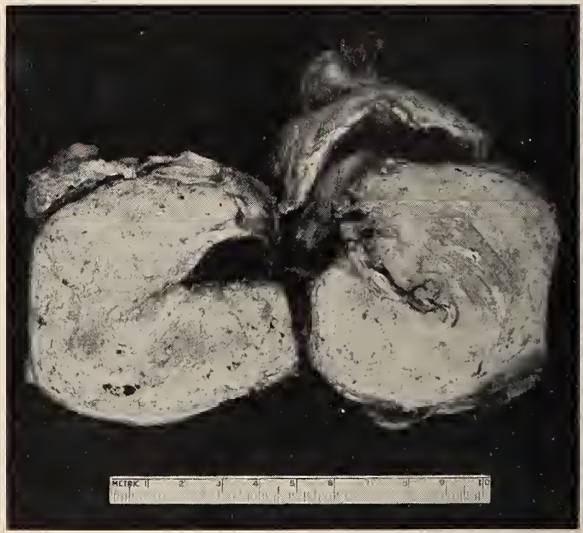

Figure 1.—Interscapular hibernoma. The cut surface is pale and fairly homogeneous, and encapsulation is apparent.

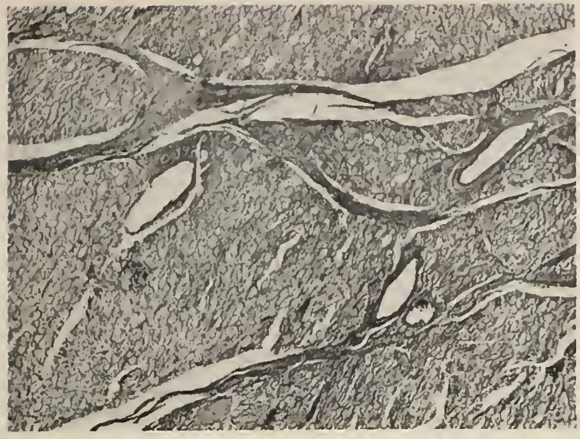

Figure 2.—Subdivision of interscapular hibernoma into compartments or lobules. Large dilated blood vessels are coursing through the fibrous septa. (Stained with hematoxylin and eosin; × 40.)

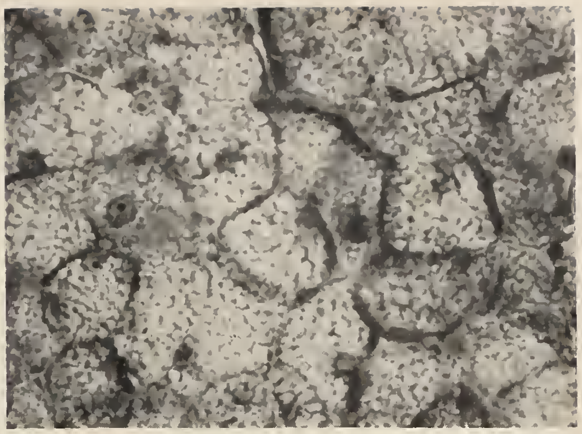

Figure 4.—Nuclei containing prominent nucleoli. The cytoplasm is packed with vacuoles which are of a fairly constant size. (Stained with hematoxylin and eosin; × 425.)

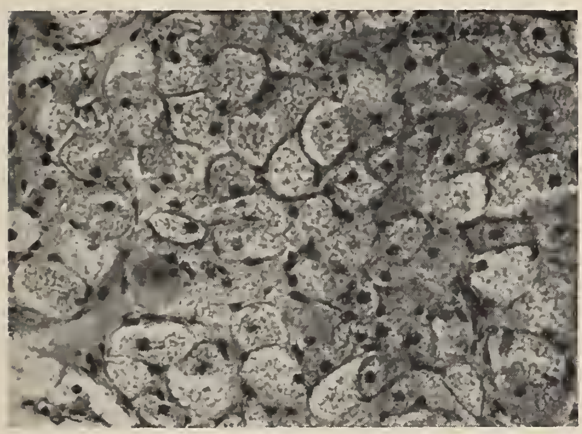

Figure 3.—Central nuclei and voluminous vacuolated cytoplasm. Cell borders are distinct, and the appearance is like that of pavement epithelium. (Stained with hematoxylin and eosin; × 250.)

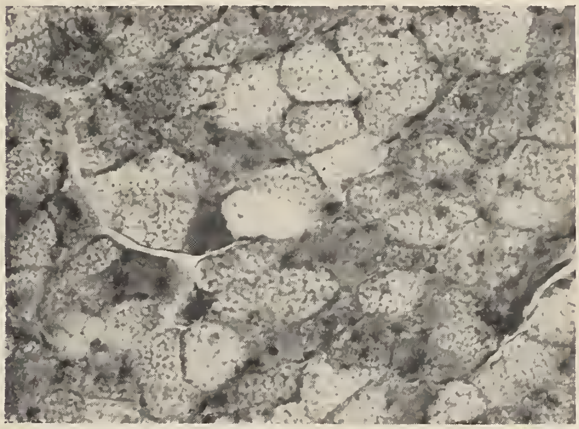

Figure 5.—Fusion of vacuoles (center of field) suggests transition to adult fat cells found scattered throughout the tumor. Granules in addition to vacuoles may be noted in some cells in this section. (Stained with hematoxylin and eosin; × 280.)

uneventful. When the patient was dismissed from the hospital on the fifth day after the operation, she was free of symptoms.

The surgical specimen measured 14 by 6.5 by 3 cm. (Figure 1). It was loosely resilient. The cut surface was a golden-tan color and had a lobulated pattern remarkably like that of the normal pancreas. The tumor contained numerous thin-walled, rather large vessels which were especially prominent in the peripheral portions. The largest of these were 2 cm. in diameter.

In microscopic examination it was noted that a capsule composed of loose collagenous tissue, containing large thin-walled vessels, invested the tumor, and gave rise to septa of like composition which were directed into the substance of the growth. When sections were examined with the low-power objective, the outstanding feature was a peculiar glandlike appearance (Figure 2). This was produced by connective septa which everywhere divided the tumor into alveolar units made up of from 10 to 100 cells. Thin-walled vessels, large and small, coursed through the supporting stroma to supply individual cellular compartments.

When viewed with higher-power objective, the tumor cells appeared large, polygonal, and highly vacuolated (Figure 3). The average diameter of the cells was 40 microns. Cell membranes were so sharp as to give the cells a very definite pavement appearance. The cytoplasm, which constituted 90 per cent of the cellular volume, was rather clear and eosinophilic. It was packed with granules and vacuoles. The latter varied from 2 to 3 microns in diameter (Figure 4). The vast majority of the cells contained hundreds of vacuoles, but here and there, as a result of fusion, a cell containing one or two large globules which occupied most of the cytoplasm, was observed. These latter forms were interpreted as representing transitions to adipose connective tissue elements which were scattered throughout the substance of the tumor (Figure 5).

The nuclei were round or oval, and were hyperchromatic. Each nucleus contained a large nucleolus. The diameter of the nuclei averaged about 6 microns, and the position was uniformly central except in occasional cells in which confluent vacuoles had pushed the nucleus to one side. Flattening of the nucleus even under these circumstances was rarely of the degree noted in adipose connective tissue cells. When special stains for fat were applied, such as the osmic acid and Sudan 3 stains, there was observed to be a large amount of fat in the vacuoles and in many of the granules.

A specimen of the tumor which had been fixed in formalin was submitted to Dr. M. H. Power of the Section of Biochemistry of the Mayo Clinic. When the specimen was dried in vacuo, it lost 54 per cent of its dried weight. A portion of the dried sample weighing 460 mg. was treated with acidified alcohol-ether mixture, and the extract was evaporated to dryness. By resolution of the residue in petroleum ether followed by filtration and reevaporation to dryness, the amount of dry lipid was found to be 260 mg. (56.6 per cent). Titration of this fat residue in benzine consumed only 1.0 ml. of tenth-normal base, an equivalent of 28.4 mg. of fatty acid. It was determined by tests that only small amounts of cholesterol and of lecithin were present. It appeared, therefore, that the lipid material in the submitted specimen was largely neutral fat.

When the patient was last examined, in January 1952, she was in excellent health and there was no evidence of recurrence of the tumor.

COMMENT

Inasmuch as the microscopic configuration noted in all reported hibernomas in human beings has been so nearly like that of the so-called hibernating gland, brief mention of the structure of the latter is pertinent. Moreover, since Hatai,[8] Shattock[13] and other authors have described interscapular masses of hibernal fat found in human beings, seemingly there is ready explanation of the origin and site of the tumor in the case here reported.

The hibernating gland, which originally was described in 1670 by Velsch,[16] has been studied by a number of investigators, and from their reports the following observations may be made. It does not occur as a distinct organ in all species of winter-sleepers, and it occasionally is found as a tissue distinct from ordinary fat in a number of non-hibernating animals. In many species, hibernating as well as non-hibernating, clusters of cells having the moruloid appearance of the hibernating gland but lacking the glandular arrangement may be found in the mediastinal, retroperitoneal, cervical, axillary and interscapular regions. These clusters of cells are often intermingled with masses of ordinary fat, the cells of which are uniglobular. The proportion of multiglobular and uniglobular fat frequently changes with age, and there is rather good evidence to support the opinion that the former changes into the latter. The reverse of this mutation has not been observed.

Most current opinion, therefore, supports the view that hibernal tissue is not to be regarded as a gland, and that it is not even essential in the metabolic economy of hibernation. The theories that this fat is modified thymic tissue, that it participates in hematopoicsis, and that it elaborates some kind of internal secretion are mentioned merely to cite their abandonment.

In light of observations in embryologic studies on the histogenesis of adipose tissue by Bell,[1] Rasmussen,[12] Wells,[17] Shattock[13] and others it seems more logical that the tumor derives from such tissue rather than from a hibernating glandular homologue which does not actually exist. Pertinent details of the process are as follows: The primary phase of the development of adipose tissue occurs in early embryonic life when minute oily droplets develop within the cytoplasm of certain spindle and stellate vascular mesenchymal tissues. It is not certain whether this mesenchyme is predestined to become a repository for lipoids or whether it is pluripotential, but the matter is unimportant from the standpoint of this thesis.

In certain situations, as in subcutaneous tissue, very early fusion of fat globules occurs, the cells becoming uniglobular, and the nuclei, greatly compressed, assuming a position at the periphery. The result is adipose tissue "ordinaire." In other zones, notably the mediastinal, retroperitoneal, cervical, axillary and interscapular, the previously mentioned process of fusion is delayed or does not occur, the cellular end products being round and having a multiglobular or moruloid appearance. When, as in the case of winter-sleeping species, there is organization into compartmental units and retention of the primitive vascular pattern, the so-called hibernating gland develops. Multilocular fat may, therefore, be looked upon as a stage of arrest, so to speak, in the formation of ordinary adipose tissue, and hibernomas may be considered tumefactive proliferations of these "immature" elements.

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California MEDICINE

EDITORIAL

A.M.A. Annual Meeting

CHICAGO PROVED its eminence as a host city to the American Medical Association meeting last month, when some 15,000 physicians and a like number of others gathered for the one hundred and first annual A.M.A. session. The big medical meeting of the year was, by all reports, one of the finest in the national organization's history.

On the scientific side, about 400 papers were presented before the fifteen scientific divisions. Attendance, as usual, was to capacity and the papers of extremely high caliber. Enthusiasm in many sections was sharpened by the advance meetings of numerous specialty societies. These, as well as the A.M.A. sessions themselves, drew an outstanding array of science writers from all parts of the country.

For the hundreds of exhibits, both scientific and technical, Chicago's famed Navy Pier was used. Five-eighths of a mile long, this structure literally gleamed with what has been called "a world's fair of medicine." Personnel of the A.M.A. exhibit departments used motor scooters to cover the distances they had to travel to administer the show.

In the House of Delegates, interest was pretty well centered on the controversy which has arisen between the A.M.A. and the Commission on the Health Needs of the Nation appointed by President Truman. Dr. John W. Cline, outgoing A.M.A. president, leveled off at this commission in his farewell address to the House of Delegates and was immediately supported by a resolution pointing out the political motivation for the appointment of the commission. After considerable discussion, pro and con, this resolution was tabled, only to rise again when the original parliamentary procedure was found to have been faulty. Reintroduced in a way that satisfied parliamentary rules, the resolution was assigned to a reference committee where opponents and proponents were given full opportunity to state their views. When the resolution was returned to the House, altered only by elimination of personalities, it received an overwhelmingly affirmative vote.

Numerous other actions were taken by the House of Delegates, among them the elimination of A.M.A. Fellowships. When the national body began assessing annual membership dues, the coexistence of membership and fellowship caused endless confusion. Now there is only one designation—*member.*

A California resolution adopted by the C.M.A. House of Delegates in April, calling for negotiations looking toward eventual amalgamation of the medical and osteopathic professions, was well received by the House of Delegates. Support was apparent from many states where the licenses of both medical doctors and osteopathic physicians and surgeons are identical and where this fact causes many problems. The A.M.A. governing body referred this proposal to the Board of Trustees, with the suggestion that steps be taken in conjunction with the American Osteopathic Association to review the present situation. One item of importance in this connection was the suggestion that any stigma of unethical conduct be

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removed from a doctor of medicine who might otherwise teach in an osteopathic school and help it elevate its standards. This is a long-range program but at least it is now officially launched and cannot but make progress.

Dr. Louis H. Bauer, New York, who was chosen as president-elect a year earlier, was seated as president. The delegates elected Dr. Edward J. McCormick of Toledo as the new president-elect, and Dr. James R. Reuling of Bayside, N. Y., as Speaker of the House of Delegates. California's Dr. E. Vincent Askey was unanimously elected Vice-Speaker of the House, a position he filled splendidly as vice-speaker pro tem during the entire meeting.

For members of the Board of Trustees, the delegates reelected Dr. Dwight H. Murray of Napa for a five-year term and chose Dr. James R. McVay of Kansas City for a like period. Dr. Murray subsequently was again made chairman of the board. Dr. John Cline was elected to the Council on Medical Education and Hospitals.

All in all, the meeting was a smooth-running and successful gathering. Proceedings of the House of Delegates are now appearing in the *Journal of the American Medical Association*, and many of the papers read before the scientific sections will soon be in print. Both the business and the scientific reports are recommended reading.

New Lines

EVEN ONE NOT greatly concerned with fashion or with change for the sake of change may note in moments of prideless candor that a car he has confidently driven perennially, is less serviceable than later models, and perhaps less handsome.

In the interest of greater serviceability and with a nod to cosmetic values, beginning with this issue CALIFORNIA MEDICINE comes out with changes in design. Foremost, for easier reading the lines of type in text matter are slightly more widely separated than heretofore. To fetch the eye, the type face used for the titles of articles is one that, to borrow a word from a profession given to imaginative language, has a little more *oomph.* Text material is salted with subheads that are bolder than those formerly used; and, for both readability and accent, headings for tables and captions for pictures are a little more extended and a little bolder. The editorial page and the first page of the California Medical Association section and of the Book Reviews section have been spruced. Other changes may be made from time to time to make your journal easier to read, or just for good looks.

As CALIFORNIA MEDICINE is, in a sense, a representative of the California Medical Association, it is only proper to send it forth suitably dressed.

LETTERS to the Editor . . .

Prenatal Sex Determination

In the course of a study of possible applications of the Richardson Pregnancy Test[2] to saliva, tears and perspiration, Raff and Richardson[1] of the Department of Biochemistry, Loyola University, Chicago, tested the salivas of 376 women during the sixth or seventh months of pregnancy. In 225 of these salivas the Richardson test was positive, while 151 of the women gave negative salivary reactions.

An apparent explanation of this difference was suggested after delivery of the child, when 218 (or 98.6 per cent) of the women with positive salivary reactions gave birth to a male child, while 148 (or 95.5 per cent) of the women with a negative Richardson salivary reaction gave birth to a female child.

The Loyola biochemists believe that the substance responsible for the positive salivary reaction is some unknown androgenic hormone secreted by the unborn male child and selectively excreted by the maternal salivary glands since a positive test results in the non-gravid female after an injection of testosterone or androsterone. Their preliminary report is made in the hope of stimulating early confirmations of their theoretically and clinically suggestive findings.

W. H. MANWARING, M.D.
Palo Alto

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California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Drafts: Minutes of the 389th, 390th, 391st, 392nd and 393rd Meetings of the Council, Los Angeles, April 26 to 30, 1952.

The meeting was called to order by Chairman Shipman in Conference Room 8 of the Biltmore Hotel, Los Angeles, at 9:30 a.m., Saturday, April 26, 1952.

Roll Call:

Present were President MacLean, President-Elect Alesen. Councilors West, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Lum, Green, Pollock, Frees, Shipman, Varden and Heron; Speaker Charnock and Secretary Daniels. Absent for cause, Councilor Thompson and Editor Wilbur.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Executive Secretary Hunton, Legal Counsel Hassard, Public Relations Director Clancy and associates Pettis and Gillette; County Society executive secretaries Bannister of Orange, Jensen of Fresno, Kihm of San Francisco, Nute of San Diego, Thompson of San Joaquin, Venables of Kern and Wood of San Mateo; Vice-Speaker Randel; Mr. William M. Bowman of California Physicians' Service: Messrs. Clem Whitaker, Jr., and Ned Burman of public relations counsel; Drs. Dwight H. Murray, Francis J. Cox, Donald Cass, Leopold H. Fraser, John R. Upton, Louis Regan, Packard Thurber, Sr., George Maner and Frank A. MacDonald; and Hon. Sam L. Collins, Speaker of the California State Assembly.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 388th Council meeting, held February 10, 1952, were approved.

(b) On motion duly made and seconded, minutes of the 230th Executive Committee meeting, held March 26, 1952, were approved.

2. *Membership:*

(a) On motion duly made and seconded, one 1950 member whose 1950 and 1951 dues had been received since the preceding Council meeting was reinstated to membership.

(b) On motion duly made and seconded, eight (8) 1951 members whose 1951 dues had been received since the preceding Council meeting were reinstated to membership.

(c) On motion duly made and seconded, 532 members whose 1952 dues had been received since April 1, 1952, were reinstated to membership.

(d) On motion duly made and seconded in each instance, nine (9) applicants were voted Associate Membership. These were:

Waldo E. Golden, Mervin J. Goldman, Yoshiye Togosaki, Alameda-Contra Costa; Robert Monlux, William Rice, Virginia Stammer, Fresno County; Robert J. Garbarino, Madera County; Leon L. Gardner, San Diego County; Earl W. Escher, San Francisco.

(e) On motion duly made and seconded in each instance, twelve (12) applicants were granted Retired Membership. These were:

Margaret Sisson, Alameda-Contra Costa; Charles R. Castlen, Arch J. Dickson, Leland Ellis, John Severy Hibben, Samuel D. Ingham, John C. Irwin, Hyman Lischner, Arthur A. McClurkin, Cyrus W.

LEWIS A. ALESEN, M.D. . . . . President
JOHN W. GREEN, M.D. . . . . President-Elect
DONALD A. CHARNOCK, M.D. . . . . Speaker
WILBUR BAILEY, M.D. . . . . Vice-Speaker
SIDNEY J. SHIPMAN, M.D. . . . . . Council Chairman
ALBERT C. DANIELS, M.D. . . . . . Secretary-Treasurer
DONALD D. LUM, M.D. . Chairman, Executive Committee
DWIGHT L. WILBUR, M.D. . . . . Editor
JOHN HUNTON . . . . Executive Secretary
General Office, 450 Sutter Street, San Francisco 8
ED CLANCY . . . . Director of Public Relations
Southern California Office:
417 South Hill Street, Los Angeles 13 • Phone MAdison 8863

Poley, Francis B. Sheldon, Gerhard J. Torell, Los Angeles.

(f) On motion duly made and seconded in each instance, 22 applicants were granted a reduction of dues because of illness or postgraduate study.

(g) Discussion was held on a request from a physician for clarification of his membership application to a county society and it was regularly moved, seconded and voted that the Secretary advise the applicant of the provisions of the Constitution and By-Laws governing admission to membership.

3. *Financial:*

(a) A report of bank balances as of April 22, 1952, was received and ordered filed.

(b) A request from the World Medical Association for a renewal of a subscription was discussed and it was agreed to postpone action until more specific details are received.

(c) On motion duly made and seconded, it was voted to appropriate $425 as one-half payment for the services of a referee in a disciplinary case in Alameda-Contra Costa Medical Association, the county paying the other half.

(d) A report was received on the loan to New Mexico Physicians' Service, showing an outstanding balance of $9,250 and a current inability of NMPS to make immediate payments.

(e) Dr. Lum, chairman of the Auditing Committee, discussed the proposed budget for the 1952-1953 fiscal year, which contemplated annual dues of $40, and after discussion it was regularly moved, seconded and voted that the proposed budget be approved for referral to Reference Committee No. 2 of the House of Delegates.

In connection with the budget it was regularly moved, seconded and voted to call attention to the fact that the budget item for the Cancer Commission recognizes the relinquishment of federal funds in the operation of the tumor registry in Los Angeles and to approve this principle in all endeavors possible.

It was regularly moved, seconded and voted that alternate delegates to the American Medical Association be reimbursed for attending one A.M.A. meeting annually if not seated as official representatives.

On motion duly made and seconded, it was voted to set up committees of A.M.A. delegates, C.M.A. delegates, Councilors and county society officers to put on a personal drive to secure subscriptions to the American Medical Education Foundation, rather than to rely upon an appropriation from the Association.

4. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, presented the revised fee schedule which the committee proposed for negotiations with insurance carrier representatives. Discussion was held on one item, which would provide a reduced fee for services rendered by nonmedical personnel; Drs. Packard Thurber, Ben Frees, Donald Cass and Wayne Pollock participated.

5. *Blood Bank Commission:*

Dr. John R. Upton, chairman of the Blood Bank Commission, reported on the opening of the Houchin Community Blood Bank in Bakersfield, latest unit in the statewide system, on April 20. He requested that an additional loan of $15,000 be made to this blood bank from the revolving loan fund. On motion duly made and seconded, this loan was approved.

Dr. Upton also recommended that the repayment of 50 cents per unit on the loan made to the San Bernardino-Riverside Blood Bank be applicable only to civilian blood supplies, not military, and on motion duly made and seconded, this recommendation was approved.

Dr. Upton also reported on a recent meeting with area officials of the Red Cross in an effort to compose differences in the armed forces blood program. The eight participating California blood banks have delivered, through the end of March, a total of 255,559 units of blood under this program.

6. *American Academy of Forensic Sciences:*

Dr. Louis J. Regan reported on the March meeting in Atlanta, Ga., of the American Academy of Forensic Sciences, which attracted physicians, attorneys and law enforcement officers from a wide area. He reported apparent progress in the move to substitute medical examiner systems for coroner systems or requiring that coroners be physicians. The academy now has as members representatives of nearly all the major universities of the country and has assumed the responsibility of examining and accrediting applicants for certificates as forensic science diplomates.

7. *Committee on Standing Committees:*

The chairman named Drs. Pollock (chairman), Heron and Sampson as a committee to make nominations for appointments to the standing committees, this committee to report back prior to the April 29 meeting of the House of Delegates.

8. *Special Committee on Psychology:*

Dr. Lewis T. Bullock, chairman of the special Committee on Psychology, submitted a written report and verbally reported on the meetings held by his committee with representatives of various organizations. He outlined the problems encountered by untrained or poorly trained persons who are, in effect, practicing medicine and suggested that minimum standards for recognized psychologists be established at an A.B. degree, plus three additional years culminating in a Ph.D. degree, plus one to five years of training under a qualified psychiatrist.

Dr. Bullock recommended that the Council go on record in favor of these requirements and the other standards in his committee's report on a licensing law for psychologists. On motion duly made and seconded, the Council approved the committee's written report, subject to an amendment which would continue this committee in effect and call upon it to cooperate with the Committee on Public Policy and Legislation in putting these recommendations into legislative effect.

9. *C.P.S. Study Committee:*

Drs. Wilbur Bailey, Donald Carson, Dave Dozier, F. E. Clough, Leslie Magoon, James Graeser and Joseph M. de los Reyes, members of the C.P.S. Study Committee, appeared before the Council and Dr. Bailey gave the background of the committee's report, which Dr. Magoon presented to the Council.

On motion duly made and seconded, the report was approved.

On motion duly made and seconded, it was voted to continue this committee in existence under the balance of the appropriation previously authorized.

On motion duly made and seconded, it was voted to commend the committee on its activities and report to date.

On motion duly made and seconded, it was voted that the committee's report be presented to the House of Delegates.

10. *Public Policy and Legislation:*

Dr. Dwight H. Murray, chairman of the Committee on Public Policy and Legislation, reviewed the current legislative situation and urged that all members take an active interest in the coming primary and final elections.

11. *Public Relations:*

Mr. Clem Whitaker, Jr., reviewed the newspaper clip sheet published by his office and pointed to its usefulness in reaching California publishers and others.

12. *Advisory Planning Committee:*

Mr. Hunton reported on the April 25 meeting of the Advisory Planning Committee, at which public relations activities were reviewed and assayed. At the request of the committee and on motion duly made and seconded, Mr. Boyd Thompson, executive secretary of the San Joaquin County Medical Society, was voted into membership on the committee.

13. *Alternate Delegate to American Medical Association:*

Attention was called to the fact that Dr. A. E. Moore, elected in 1951 as an alternate Delegate to the American Medical Association, did not qualify for that post because he had not maintained the requisite A.M.A. fellowship. It was pointed out that the A.M.A. House of Delegates in June will consider a resolution which would eliminate fellowships. In view of this situation it was agreed to postpone action on this subject until after the A.M.A. meeting.

14. *Meeting Place for 1953:*

Possible meeting places for the 1953 Annual Session were reviewed and it was duly moved, seconded and voted that the Biltmore Hotel, Los Angeles, be selected as headquarters for a meeting the week of May 24, 1953.

15. *Committee on Voluntary Insurance Coverage:*

Dr. Ray reported on a meeting held with officers of a commercial insurance company which is planning to insure its own employees under an experimental dollar-deductible health insurance policy. Time will be required to gain experience under this program and later reports on its success will be made.

On motion duly made and seconded, it was voted to suggest to the county societies that the services of their public service or mediation committees be made available to insurance carriers as well as individual patients.

16. *Health Insurance for Migratory Workers:*

Dr. Morrison discussed the health insurance coverage afforded Mexican nationals in Ventura County, pointed out the inadequate fees allowed physicians and surgeons and suggested that standard benefit provisions be adopted in all counties on an adequate indemnification basis. On motion duly made and seconded, it was voted to refer this matter to the Committee on Rural Health.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:30 p.m., the Council to meet next at 8:00 a.m., Sunday, April 27, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Sidney J. Shipman, M.D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

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390th Meeting

The meeting was called to order by Chairman Shipman in Conference Room 6 of the Biltmore Hotel, Los Angeles, at 8:00 a.m., Sunday, April 27, 1952.

Roll Call:

Present were President MacLean, President-Elect Alesen, Speaker Charnock, Councilors West, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Green, Pollock, Frees, Shipman, Bailey, Varden and Heron; Secretary Daniels and Editor Wilbur. Absent for cause: Councilors Lum and Thompson.

A quorum present and acting.

Present by invitation were Vice-Speaker Randel. Executive Secretary Hunton, Legal Counsel Hassard. Public Relations Director Clancy, Legislative Chairman Dr. D. H. Murray, William T. Nute, executive secretary of the San Diego County Medical Society. Messrs. Clem Whitaker, Jr., and Ned Burman of public relations counsel, and Drs. DeWitt Burnham and E. Vincent Askey.

1. *Legal Department:*

(a) Mr. Hassard reported on a question of admission to membership in a component county society and it was regularly moved, seconded and voted that the secretary be instructed to notify the applicant that the question of admission to membership lies solely in the hands of the county society, in accordance with the provisions of the by-laws.

(b) Mr. Hassard discussed the question of non-medical personnel handling electroencephalography; the suggestion has been made that the Board of Medical Examiners be requested to define this procedure, as well as others, as the practice of medicine. On motion duly made and seconded, it was voted to establish a committee to consider the broad problem of non-medical personnel using diagnostic devices.

(c) On the question of a lawsuit brought against another organization but evidently intended to name the Association as a defendant, it was regularly moved, seconded and voted to authorize legal counsel to act for the Medical Society of the State of California on behalf of the California Medical Association.

(d) Mr. Hassard reviewed the recent litigation in San Diego County and pointed out that an appeal may now be taken directly to the State Supreme Court from the judgment on the cross-complaint of the San Diego County Medical Society.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 10:00 a.m., the Council to meet next at 7:30 a.m., Monday, April 28, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Sidney J. Shipman, M. D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

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391st Meeting

The meeting was called to order by Chairman Shipman in Conference Room 6 of the Biltmore Hotel, Los Angeles, at 7:30 a.m., Monday, April 28, 1952.

Roll Call:

Present were President MacLean, President-Elect Alesen, Speaker Charnock, Vice-Speaker Randel, Councilors West, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Green, Pollock, Frees, Thompson, Shipman, Bailey, Varden and Heron, Secretary Daniels and Editor Wilbur. Absent for cause, Councilor Lum.

A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Public Relations Director Clancy, Legal Counsel Hassard, Associate Public Relations Director Pettis, Legislative Chairman Dr. D. H. Murray, Mr. William M. Bowman, executive director of California Physicians' Service; Dr. Wilton L. Halverson, State Director of Public Health; Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission; and Messrs. Fred Sobeck and George Hurwitz, members of the Student American Medical Association, University of California chapter, and guests of the Association at this meeting.

1. *Student American Medical Association:*

Mr. Fred Sobeck reported on the recent annual meeting of the Student American Medical Association, at which representatives of 35 medical schools were present. Questionnaires have now been sent to hospitals to permit the evaluation of internships and Mr. Sobeck requested aid in reaching other hospitals where U. C. alumni are not available for completing these questionnaires.

Mr. Sobeck also discussed other programs of his chapter, among them the inquiry into prepaid medical care for families of students, establishment of an emergency loan fund, orientation of new students and the evaluation of teaching courses for the mutual benefit of students and faculty.

It was agreed that Mr. Sobeck should address the House of Delegates on April 29.

2. *State Department of Public Health:*

Dr. Wilton L. Halverson, State Director of Public Health, reported on a new program, in cooperation with the State Department of Agriculture, farm bureaus, granges and others, to require the pasteurization of all milk supplies except certified milk.

On rabies control, he discussed the control of stray animals as carriers and reported on work being done to develop an immunizing serum for dogs.

The Crippled Children's Act, Dr. Halverson said, is now under review, both by the Department of Public Health and by the Interim Committee on Public Health of the Assembly. Financing and the allocation of funds to the counties are two of the items being studied.

Dr. Halverson also discussed the proposed legislation for establishment of a rehabilitation center, the studies on toxicity of insecticides and the review of pneumoconiosis in the diatomaceous earth industry, the latter in cooperation with employers and labor unions.

Dr. Halverson agreed to give a later report on his experiences in Central and South American countries which he has recently visited on a public health mission of international scope.

3. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, reported on his committee's meeting with insurance representatives, stated that further discussions are to be held and cautioned that various steps must be taken before a final fee schedule is worked out. He estimated that considerable time would be required to complete this work.

4. *California Physicians' Service:*

Mr. William M. Bowman, executive director of California Physicians' Service, reported 783,714 beneficiary members as of March 31, 1952, and estimated this number would be reduced to about 650,000 by the end of the year. Administrative expenses of $292,000 annually have been eliminated under the membership reduction. Of the loss in membership, some 250,000 members were removed from the rolls when C.P.S. and Hospital Service of Southern California severed joint operations.

Mr. Bowman reported the stabilization fund now totals $3,200,000 and that further steps are being taken to reduce operating costs. In response to a question, he stated that administrative costs of the Veterans Administration program are now about 10 per cent, compared with about 8 per cent in Michigan, where the Veterans Administration follows a more stringent program in allowing hometown medical care for service-connected disabilities.

5. *Executive Session:*

On motion duly made, seconded and carried the Council went into Executive Session.

Adjournment:

The Council having risen from executive session and there being no further business to come before the meeting, it was adjourned at 9:30 a.m.

Sidney J. Shipman, M. D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

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392nd Meeting

The meeting was called to order by Chairman Shipman in Conference Room 6 of the Biltmore Hotel, Los Angeles, at 7:30 a.m., Tuesday, April 29, 1952.

Roll Call:

Present were President MacLean, President-Elect Alesen, Speaker Charnock, Vice-Speaker Randel, Councilors West, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Green, Pollock, Frees, Thompson, Shipman, Bailey, Varden and Heron, Secretary Daniels and Editor Wilbur. Absent for cause, Councilor Lum.

A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Legal Counsel Hassard, Messrs. Clancy, Gillette and Pettis of public relations staff; Ben H. Read, executive secretary of the Public Health League of California; Frank H. Kihm, executive secretary of the San Francisco Medical Society; William M. Bowman, executive director of California Physicians' Service; Messrs. Fred Sobeck and George Hurwitz of the Student A.M.A.; and Drs. R. S. Kneeshaw, Donald Cass, Sam J. McClendon, Karl Schaupp, Arthur A. Kirchner, Walter Cherry, DeWitt Burnham, John W. Cline and Paul D. Foster.

1. *Elimination of Interim Session:*

Dr. Arthur A. Kirchner, chairman of a reference committee of the House of Delegates, discussed the problem before the committee in the form of resolutions which would eliminate interim sessions of the House of Delegates. He reviewed the arguments made for and against this proposal and reported that the reference committee proposed to recommend in favor of the elimination.

2. *Committee on Public Health and Public Agencies:*

Dr. Alesen, chairman of the Committee on Public Health and Public Agencies, reported on a meeting with State Department of Public Health representatives on the subject of the clinic licensing law. It was decided, the Council concurring, that the committee should request the State Department of Public Health to outline proposals for changes in the current law, legal counsel then to prepare these items for future legislative action.

3. *Committee on Standing Committees:*

Dr. Pollock reported for the Committee on Standing Committees, recommending three-year appointments as listed below. These were approved by the Council.

Committee on Associated Societies and Technical Groups: Dr. James Regan, Los Angeles, replacing Dr. J. Norman O'Neill.

Committee on History and Obituaries: John Barrow, Los Angeles, replacing Dr. E. T. Remmen.

Committee on Hospitals, Dispensaries and Clinics: Dr. Howard C. Miles, Salinas, to be reappointed.

Committee on Industrial Practice: Dr. Packard Thurber, Sr., Los Angeles, replacing Dr. Jerome

Schilling. Dr. Raymond M. Wallerius, chairman.

Committee on Medical Defense: Dr. Clifford Loos, Los Angeles, to succeed himself. Dr. Alfred B. Wilcox. Santa Barbara, to replace Dr. Otto P. Diederich, resigned.

Committee on Medical Economics: Dr. Roy Ouer, San Diego, replacing Dr. Arthur A. Kirchner. Dr. L. H. Fraser, chairman.

Committee on Medical Education and Medical Institutions: Dr. Walter MacPherson, Los Angeles, replacing Dr. Francis Scott Smyth. Dr. Lewis T. Bullock, chairman.

Committee on Military Affairs and Civil Defense: Dr. Frank F. Schade, Los Angeles, to be reappointed. Dr. John C. Ruddock to be appointed as consultant.

Committee on Postgraduate Activities: Dr. Herbert Jenkins, Sacramento, replacing Dr. Carroll B. Andrews. Dr. Thomas Collins, Fresno, replacing Dr. John D. Ball, deceased.

Committee on Public Policy and Legislation: Dr. James Doyle, Beverly Hills, replacing Dr. Peter Blong.

Committee on Scientific Work: Dr. George Houck, Palo Alto, replacing Dr. Clayton Mote.

Physicians' Benevolence Committee: Dr. Elizabeth Mason Hohl, Los Angeles, to be reappointed.

The committee recommended the abolishment of the Committee on Medical Defense. An amendment to the by-laws will be drawn up for the next session.

4. *Vocational Nursing:*

Dr. Charnock reported on the vocational nurse problem. It was moved, seconded and carried to refer this to the General Practice Section.

Adjournment:

There being no further business to come before the Council, the meeting was adjourned at 9:30 a.m.

Sidney J. Shipman, M. D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

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393rd Meeting

The meeting was called to order by Chairman Shipman at 7:30 a.m., Wednesday, April 30, 1952, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Roll Call:

Present were President Alesen, President-Elect Green, Speaker Charnock, Vice-Speaker Bailey, Councilors West, Loos, Sampson, Morrison, Dau, Ray, Pollock, Montgomery, Frees, Thompson, Shipman, Varden, Heron, Carey, Wheeler and Kirchner, Secretary Daniels and Editor Wilbur. Absent for cause, Councilors Lum and Bostick.

A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Legal Counsel Hassard, Messrs. Clancy, Pettis and Gillette of public relations staff and county society executive secretaries Donovan of Santa Clara County and Thompson of San Joaquin County.

The meeting was recessed at two points to permit meetings of the Executive Committee and of the members and the board of directors of the Trustees of the California Medical Association.

1. *Election of Council Officers:*

(a) On motion duly made and seconded, Sidney J. Shipman was unanimously elected Chairman of the Council.

(b) On motion duly made and seconded, Donald D. Lum was unanimously elected Vice-Chairman of the Council.

2. *Appointment of Officers:*

(a) On motion duly made and seconded, Albert C. Daniels was unanimously appointed Secretary-Treasurer.

(b) On motion duly made and seconded, Dwight L. Wilbur was unanimously appointed Editor.

(c) On motion duly made and seconded, the firm of Peart, Baraty and Hassard was unanimously appointed legal counsel.

3. *Appointment of Auditing Committee:*

The chairman, with the consent of the Council, reappointed Drs. Lum (chairman), Heron and Montgomery as members of the Auditing Committee for the ensuing year.

4. *Committee on Public Health and Public Agencies:*

The Chairman, the Council concurring, appointed Francis E. West as chairman, and Hollis L. Carey and Clifford Loos as members of the Committee on Public Health and Public Agencies, the latter two succeeding C. V. Thompson, retired, and L. A. Alesen, resigned.

On motion duly made and seconded, approval was voted of the following resolution:

Resolved, It is the duty of organized medicine to seek out and eliminate from its ranks any physician who is dishonest, either with his patients or with an insurer of the cost of his services; therefore, each component society of the California Medical Association is charged with the duty of taking vigorous disciplinary action, to the end that the good name of medicine and the best interests of the public will be served; and be it further

Resolved, That California Physicians' Service be urged to continue with vigor its current investigations and, when necessary, to take legal action.

It was agreed that copies of this resolution be sent to all county societies and that legal counsel prepare a memorandum for county societies to follow in undertaking disciplinary proceedings and, if necessary, prepare by-law amendments to facilitate such proceedings by the county societies.

6. *Public Service Committee:*

Discussion was held on the advisability of maintaining a statewide committee to hear complaints against member physicians; it was pointed out that such a committee, originally known as the Grievance Committee, had been in existence for some three years but that its services had been called upon only on rare occasions. On motion duly made and seconded, it was voted to reactivate this committee, possibly under another name, and to advise the county societies of the availability of its services.

7. *Legal Department:*

After discussion, and on motion duly made and seconded, it was voted to instruct legal counsel to proceed with an appeal to the California Supreme Court in the San Diego litigation.

On motion duly made and seconded, the Council approved by unanimous vote an appropriation of $7,500 for additional fees in this case.

8. *Association Representation on C.P.S. Board of Trustees:*

The Council named Councilors Heron, Morrison and Dau as representatives of the Council to serve on the C.P.S. Board of Trustees, in accordance with a resolution adopted by the House of Delegates.

9. *Hospitals:*

Prolonged discussion was held on the problems of proper staff safeguards in some hospitals which have been constructed, in whole or in part, through the use of public funds. Further consideration is to be given this problem by the Committee on Public Health and Public Agencies.

On motion duly made and seconded, it was voted to send a representative to a forthcoming meeting of the Association of District Hospital Directors and that a statement of principles relating to district hospitals be prepared by the above committee.

10. *County Society Secretaries:*

Dr. Morrison suggested that some means be adopted for honoring county society secretaries who for long periods of time had served well in the interests of both their county societies and the Association. It was duly moved, seconded and voted to appoint a committee to consider ways and means of recognizing such services.

11. *Time and Place of Next Meeting:*

It was agreed to hold the next Council meeting in San Francisco the week-end of June 21-22, 1952, and to correlate future meetings with the meetings of the C.P.S. Board of Trustees in order to conserve the time of liaison members of one body to the other.

12. *Executive Session:*

It was moved, seconded and carried that the Council go into Executive Session.

Adjournment:

The Council having risen from executive session and there being no further business to come before the meeting, it was adjourned at 11:00 a.m.

SIDNEY J. SHIPMAN, M. D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

Executive Committee Minutes

Tentative Draft: Minutes of the 231st Meeting of the Executive Committee, Los Angeles, April 30, 1952.

The meeting was called to order by Sidney J. Shipman, acting as temporary chairman, in Conference Room 6 of the Biltmore Hotel, Los Angeles, on Wednesday, April 30, 1952, at 10:00 a.m.

Roll Call:

Present were President Alesen, President-Elect Green, Council Chairman Shipman and Speaker Charnock. Absent for cause, Auditing Committee Chairman Lum.

A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Legal Counsel Hassard, and several members of the Council.

1. *Election of Chairman:*

On nomination duly made and seconded, Donald D. Lum was unanimously elected chairman of the Executive Committee.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 10:10 a.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

C.M.A. House of Delegates Proceedings

FIRST MEETING

APRIL 27, 1952

The first meeting of the House of Delegates of the 81st Annual Session of the California Medical Association was held at the Biltmore Hotel, Los Angeles, California, Sunday, April 27, 1952. The meeting was called to order at 9:45 a.m. by the Speaker of the House, Dr. Donald A. Charnock.

Speaker Charnock: The 81st meeting of the House of Delegates of the California Medical Association will please be in order.

We will first have the report of the Committee on Credentials, Dr. Foster of Santa Clara County.

REPORT OF THE COMITTEE ON CREDENTIALS

Dr. Thomas M. Foster (chairman): Mr. Speaker, a quorum is present. One hundred fifty-four members have been seated.

Speaker Charnock: Thank you, Dr. Foster.

There is a quorum present in the House. The Chair is ruling that a roll call will not be necessary due to the fact that we have a signed list of all members present. If there is no objection from the House, we will dispense with the roll call. (Applause.)

The chairman of each delegation will be responsible for voting of his delegation. There have been several questions about eligibility for membership in the House. Eligibility for membership in the House depends upon Chapter V, Section 6 of the By-Laws. There has been some question about the seating of delegates and alternates according to Chapter V, Section 3 of the By-Laws. It specifically states that delegates or their elected alternates will be seated and the Chair rules that only delegates or their elected alternates will be seated.

Dr. Wilbur Bailey (Los Angeles County): May I appeal from that decision? As you know, it has been customary in the past for any alternate, if he were present, to take the place of a delegate. That is to say, Dr. Adams has Dr. Black as his alternate opposite him but if Dr. Black doesn't happen to be here, if there is any alternate, he will be accepted. This has had its advantage for the smaller counties where we don't disfranchise voters because sometimes an exact alternate that should be on hand isn't on hand. Now then, the question resolves around a legal interpretation of Section 3 and the best way to find out about it is to ask the attorney. If he doesn't know, the best way to find out is to see what the House wants. The Chair has ruled that a duly elected delegate or alternate might be seated, whose name is opposite, and, if the man isn't there you can't go down and get somebody else from your delegation.

I believe that we could go back in the By-Laws under our old policy of taking any alternate provided he is present. Therefore, I appeal from the decision of the Chair merely as a method of bringing it before the House. If you vote in favor of the Chair, all right, because, after all, he had to rule one way or the other. Then we will stand as he has just ruled, that a specific alternate must be on hand for a specific delegate. If you vote against his opinion, then this body will in effect make a rule by which we can be guided later on, that any alternate may be seated in place of any delegate.

Speaker Charnock: Thank you, Dr. Bailey. I appreciate that this is a controversial matter on which the Chair ruled and I am going to ask Mr. Hassard to give us his legal opinion upon this ruling.

Mr. Howard Hassard: Mr. Speaker, members of the House of Delegates: The new By-Laws which you adopted last year contain two sections specifically relating to the composition of the House. Under the heading "House of Delegates," Chapter V of the By-Laws, Section 1, is as follows:

"Each component society shall elect a delegate and one alternate for such delegate in an aggregate number of delegates and alternates equal to the total number of delegates and alternates to which the component society is entitled."

Then Section 3 of the same chapter entitled, "Limitation on Seating of Delegates," reads this way:

"Only duly elected delegates or their elected alternates may be seated at any session of the House of Delegates unless the Secretary of the Association has been given due notice of the substitution at least fifteen (15) days in advance of the session."

You will note that the first section that I read provides that each society shall elect a delegate and one alternate for such delegate while the second section relating to the seating is in the plural, "duly elected delegates or their elected alternates." The Speaker's ruling is consistent with the language of Section 1 of Chapter V and also with the language of Section 3. However, there is room for interpretation solely because Section 3 which deals specifically with the seating of delegates uses the language, "delegates or their elected alternates." The problem has been presented to the House by the appeal. Which interpretation do you place on these two sections?

Dr. Foster: Is it possible to have the reading of the old by-law, the one that preceded this one, because I believe it was exactly the same and in the past this was ignored.

Speaker Charnock: Will the Legal Counsel advise us on that?

Mr. Hassard: I will have to do it from memory as I don't have a copy of the old by-laws. My recollection is that the prior by-laws did not limit the seating of delegates by societies in any fashion, either as to delegates or alternates. but in the absence of a quorum or an absence of other delegates or alternates any active member of a society could be seated pro tem. I don't recall any provision in the prior by-laws as the equivalent of the new sections.

Dr. George W. Kress: My memory is to the effect that the present by-law is very much the same as the previous by-laws. Through all the many years we have ignored it. We have ignored it as was stated by Dr. Bailey because, while it was desirable to have that written into the by-laws, nevertheless it follows that you would disfranchise many of our smaller units and also a good many of the voting members of the larger units.

I think if the ruling of the Chair is put in operation you will see the discrepancy that will arise and you will later regret it. Now, granted that we shouldn't pad our delegations; there is no desire to do it because our component societies have all elected their men in due form. The basic thought in the California Medical Association has always been this, that every component county society should have an opportunity to be represented and that was the reason for many years we ignored the exact language of that provision in the by-laws whereby an alternate could only be seated in the absence of the delegate if he had been specifically elected for that purpose.

I think my good friend, Mr. Hassard's memory is at fault and, John, don't you have a copy of the old by-laws?

Mr. John Hunton: We don't use them any more.

Dr. Kress: Sometimes you need them. I have a copy at home but not here.

Dr. Robertson Ward (San Francisco County): Mr. Speaker, members of the House: I was on the last Committee of Five that worked on this present Constitution and By-Laws. Now that we are getting into a number of things, I had better tell you what my memory of it is. My memory of it is that we made a specific change from the old constitution and by-laws in order to pin responsibility on elected delegates and elected alternates. We did change the by-laws in this particular in order to have personal responsibility which we thought at that time was a good thing and it was voted on by you people when you adopted these by-laws.

Now, as it has worked out, it is not only going to disfranchise some of the smaller counties but it is going to prevent voting by some elected delegates and alternates. If we can do what this by-law intends, which was to have a specific delegate elected for that purpose or an elected alternate, I think it will accomplish the purpose.

Speaker Charnock: Thank you, Dr. Ward. Is there any more discussion?

Dr. E. Vincent Askey (Los Angeles County): Mr. Speaker, ladies and gentlemen of the House: I think this may be clarified in the following way. There is no intent on anybody's part, in my belief, to disfranchise anybody but it happens that with the elected delegates and their alternates we have seen fit in the past, with our constitution, to have sent to every delegate and alternate the reports of the interim committees that have been working, in order to have the people that are sitting and deciding on the issues know what they are all about. Now if we go to the A.M.A. and look at what they did, why, they have exactly the same rule. It is either the delegate or his elected alternate who must sit. Nobody else can sit if there is nobody there. The idea is this, that by reason of experience and knowledge and the information that has been sent to you before, you will know what you are talking about. It is my opinion that if we just continue as we have in the past and bring in any Tom, Dick and Harry—even though he be the best man possible—he has not had the information sent to him previously and does not know as much as he should.

Secondly, in my opinion if we hold to the rule which has been put in our Constitution and which has just been enunciated by the Speaker, we will then have the people here because the county society knows that unless these men are there they won't be represented; they will see that they are there. They will have their men there. As it has been in the past I have heard and have been a party to the—well, it doesn't make any difference if you are there or not because we will put in another man. I would heartily endorse holding to the rule of the Constitution as enunciated by the Speaker.

. . . The question was called for. . . .

Speaker Charnock: I have already recognized Dr. Montgomery and I am sorry.

Dr. Laurence Montgomery (Councilor, Eighth District): I am glad that Dr. Askey has brought up the matter of the A.M.A. We have discussed this in San Francisco at some considerable detail and we think to a certain extent there is distinct difference between the A.M.A. situation in regard to their activities and our situation here, specifically because the A.M.A. pays the way of delegates to the convention. On that basis there may be cases in which, for one reason or another, delegates are unable to attend, specifically on a financial basis, and then they would be disfranchised. I personally think if we do not do it at this time, and it may be inadvisable to make the change at this time, but it would be my thought that we will have to make the change some time.

I will agree with Dr. Askey that I do not believe, as we have had in the past, in this hit-and-miss of picking up of delegates from membership of the county society. I did not think it was wise or intelligent and I think we have enough flexibility there that we can bring up the program if we want to.

Speaker Charnock: Just for the record, and in view of this dissertation, I will say that the A.M.A. does not pay the fare of the House of Delegates or their alternates. They have several state societies who do that and California is one of the few states that do.

Are you ready for the question?

. . . The question was called for. . . .

Speaker Charnock: Those in favor of sustaining the decision of the Chair will please say "aye" and those opposed "no."

. . . A vote was taken on the decision of the Chair.

SPEAKER CHARNOCK: The Chair is in doubt. Those who are in favor of sustaining the decision of the Chair will please stand and then those opposed will please stand.

. . . A standing vote was taken. . . .

SPEAKER CHARNOCK: The House sustains the ruling of the Chair.

Although we do not have a roll call, I should like at this time to call the roll of the Past Presidents who are now members of this House and please have them stand:

Dr. George H. Kress. (Applause.)
Dr. Edward N. Ewer (Applause.)
Dr. Lyell C. Kinney (Applause.)
Dr. Junius B. Harris. (Applause.)
Dr. George G. Reinle. (Applause.)
Dr. Robert A. Peers. (Applause.)
Dr. Harry H. Wilson. (Applause.)
Dr. William R. Molony, Sr. (Applause.)
Dr. Karl L. Schaupp. (Applause.)
Dr. Lowell S. Goin. (Applause.)
Dr. Sam J. McClendon. (Applause.)
Dr. John W. Cline. (Applause.)
Dr. E. Vincent Askey. (Applause.)
Dr. R. Stanley Kneeshaw. (Applause.)
Dr. Donald Cass. (Applause.)

Thank you, gentlemen. We appreciate having you with us.

I will now go through the announcement of approval of reference committees.

The first committee is the Committee on Credentials: Thomas N. Foster, chairman; Robert A. Patrick and Warren A. Wilson.

Reference Committee No. 1: Dr. Douglass Batten, chairman; Dr. Roland R. Jantzen, Dr. James W. Moore.

Reference Committee No. 2: Dr. Stanley R. Truman, chairman; Dr. John C. Ruddock, Dr. Samuel B. Randall.

Reference Committee No. 3: Dr. E. C. Halley, chairman; Dr. E. C. Rosenow, Jr., Dr. Francis Rochex.

Reference Committee No. 4: Dr. Arthur A. Kirchner, chairman; Dr. Wayne P. McKee, Dr. Albert G. Miller.

If there is no objection from the House, these committees will stand as read. The Chair, hearing no objection, declares the committees constituted as read.

We are happy to welcome to this meeting the representatives of the press. Gentlemen, you are free to attend these meetings on the business side of the Association and you are just as welcome to sit in on the scientific sessions to be held during these four days. The officers and staff of the Association are all at your service in the event you need any clarification or any background on any topic which might be brought before this session for clarification. Don't hesitate to call on any of us. At the same time, may I please call your attention to the fact that these meetings are wide open and that every member of this House of Delegates is completely autonomous as far as this body is concerned. Any member of the House may bring before the group any resolution or any piece of business which he feels belongs here. It is then that the members of the House of Delegates decide in a democratic process which items of business will be favorably acted upon and which ones will be rejected. An item which might make news today and which might be freely debated might be dead on Tuesday and we will count upon the good judgment of any member before bring bringing a matter before this group.

The next order of business is an address by our President, Dr. H. Gordon MacLean. Dr. MacLean. (Rising applause.)

ADDRESS BY PRESIDENT

DR. H. GORDON MACLEAN: Mr. Speaker. House of Delegates: I know you will be very pleased to know that you heard my address last year when I was inaugurated and the address you will hear will be presented later in the morning.

I do wish to present my thanks for all the graciousness shown me during the past year, especially by the county medical societies when our public relations team visited the different societies throughout the state.

I also wish to thank the Woman's Auxiliary and tell you gentlemen what I think about the Woman's Auxiliary. I think they are a wonderful organization and I believe that every county should have one and get behind it and support it. It is one of our very strong right arms, you might say.

I have a very pleasant task to perform and that is the presentation of the Fifty-Year Award Pins.

SPEAKER CHARNOCK: Fifty-Year Award Pins are to be presented to the following members, and as these members' names are called will they please come forward:

Dr. Harry E. Alderson, San Francisco. Dr. Gilbert M. Barrett, San Francisco. Dr. M. T. Enloe, Butte-Glenn. Dr. George W. Fowler, Santa Clara. Dr. Austin Miller, Tulare. Dr. Alfred Newman, San Francisco. Dr. Henry J. Sartori, San Francisco. Dr. James Sharp, San Francisco. Dr. William E. Stevens, San Francisco. Dr. John Wehrly, Orange.

PRESIDENT MACLEAN: Gentlemen. I have the honor of presenting Dr. Miller of Tulare with a Fifty-Year Award Pin. I believe to have been a member of the California Medical Association for fifty years is quite a remarkable event and we must remember too the great element of service that has gone to the public in probably fifty years or more. Dr. Miller, I wish to present this pin to you at this moment. With it go the best regards of the California Medical Association not only at the present time but also we give you very best wishes for the future. I am not going to put this pin on you because I have tried this before several times in making these awards and this little thing that screws on the back is very hard to thread. (Applause.)

I also wish to make a presentation to Dr. Gilbert M. Barrett of San Francisco. He also has been practicing medicine more than fifty years. I wish to give him this Fifty-Year Award Pin at this time. (Applause.)

Speaker Charnock: Are there any more of our fifty-year gentlemen present? It seems that they live longer in San Francisco than they do in other parts of the state.

Stenographic service is available to you. Will you please have your resolutions typed in triplicate and, in presenting resolutions, will you please come to the microphone and announce your name and county so that the reporter may have it.

There is one other announcement I wish to make at this time. At 11:30 we are going on the air for a speech by our President-Elect, Dr. Lewis A. Alesen, so at that time we will interrupt the meeting to go on the air.

. . . The Vice-Speaker assumed the Chair. . . .

Vice-Speaker Randel: The House will now accede to the consideration of reports of the officers, councilors and committees. Most of these reports are printed in the Annual Reports Bulletin which you have here today. The Chair, however, will recognize any and all supplemental reports at this time.

First is the report of our President, Dr. H. Gordon MacLean.

President H. Gordon MacLean: No further report, Mr. Speaker.

Vice-Speaker Randel: Thank you.

Now, from our President-Elect, Dr. Lewis A. Alesen.

President-Elect L. A. Alesen: No further report.

Vice-Speaker Randel: Dr. Donald Charnock, Speaker of the House. Do you have any further report?

Speaker Charnock: No further report.

Vice-Speaker Randel: The report of the Vice-Speaker is likewise listed in the Annual Reports.

The Chair now recognizes Dr. Sidney J. Shipman, chairman of the Council.

Dr. Sidney J. Shipman: No additional report.

Vice-Speaker Randel: The report of the chairman of the Executive Committee, Donald D. Lum, is next. Is there anyone sitting in Dr. Lum's place? Dr. Lum is not here today.

President MacLean: I am sure there was no further report.

Vice-Speaker Randel: Report of the Trustees of the California Medical Association, Dr. MacLean.

President MacLean: No further report.

Vice-Speaker Randel: Report of the Secretary, Dr. Albert C. Daniels.

Secretary Daniels: No further report.

Vice-Speaker Randel: Mr. John Hunton, the Executive Secretary. Do you have a further report?

Executive Secretary Hunton: No further report, Mr. Speaker.

Vice-Speaker Randel: Report of the Editor of *California Medicine*, Dr. Dwight Wilbur.

Dr. Dwight L. Wilbur: No further report.

Vice-Speaker Randel: Now we proceed to the reports of the District Councilors. The Councilor of the First District, Dr. Francis E. West. Is Dr. West present? Does anyone want to submit a report in his absence? Hearing none, we will proceed.

Report of the Second District. We have no report.

For the Third District, Dr. H. Clifford Loos.

Dr. H. Clifford Loos: No further report.

Vice-Speaker Randel: Dr. J. Philip Sampson, Councilor for the Fourth District.

Dr. J. Philip Sampson: No further report, Mr. Speaker.

Vice-Speaker Randel: Councilor of the Fifth District, Dr. A. A. Morrison.

Dr. A. A. Morrison: No further report.

Vice-Speaker Randel: Dr. Neil J. Dau, Councilor for the Sixth District.

Dr. Neil J. Dau: No further report.

Vice-Speaker Randel: Dr. Hartzell H. Ray, Councilor for the Seventh District.

Dr. Hartzell H. Ray: No further report, sir.

Vice-Speaker Randel: Councilor of the Eighth District, Dr. M. Laurence Montgomery.

Dr. M. Laurence Montgomery: No further report.

Vice-Speaker Randel: Dr. Lum, Councilor for the Ninth District, is not here and is there anyone to report in Dr. Lum's place? Hearing none, we will proceed.

Dr. John Green as Councilor for the Tenth District.

Dr. John W. Green: No further report.

Vice-Speaker Randel: Dr. Wayne E. Pollock, Councilor of the Eleventh District.

Dr. Wayne E. Pollock: No further report.

Vice-Speaker Randel: Councilors-at-Large, and we will call your name in rotation. Dr. Benjamin Frees.

Dr. Benjamin Frees: No further report.

Vice-Speaker Randel: Dr. C. V. Thompson.

Dr. C. V. Thompson: No further report.

Vice-Speaker Randel: Dr. Shipman.

Dr. Sidney J. Shipman: No additional report.

Vice-Speaker Randel: Dr. Bailey.

Dr. Wilbur Bailey: No further report.

Vice-Speaker Randel: Dr. Arthur E. Varden.

Dr. Arthur E. Varden: No further report.

Vice-Speaker Randel: Dr. Ivan C. Heron.

Dr. Ivan C. Heron: No further report.

Vice-Speaker Randel: We will now hear from Mr. Hassard, our Legal Counsel.

Mr. Hassard: No further report, Mr. Speaker.

Vice-Speaker Randel: We will now proceed with the reports of Standing and Special Committees.

Dr. J. Frank Doughty (San Joaquin County): May I move that anyone having an additional report have an opportunity to give it and, Mr. Speaker, if there is no additional report of these various committees, I move they be accepted.

Dr. Bailey: I second the motion.

Vice-Speaker Randel: You have heard the motion and all of those in favor will signify by saying "aye" and those opposed "no."

. . . A vote was taken on the motion and the motion was carried. . . .

Vice-Speaker Randel: We, however, must still ask for supplemental reports of the standing and special committees.

Dr. Scarborough, chairman of the Cancer Commission.

Dr. Robert R. Scarborough: Mr. Speaker and members of the House: The Cancer Commission wishes to call the attention of the House of Delegates of the California Medical Association to the fact that the Commission has continued approval of the program of the American Cancer Society in California. This society has adhered to the firm policy of conducting its program only with the approval of the Cancer Commission and the individual county medical societies. The medical profession has been the policy-making body with this society and the society has demonstrated consistently its desire to work in cooperation with the medical profession. Therefore the Cancer Commission recommends that by acceptance of this report the House of Delegates gives approval to the program of the California Division of the American Cancer Society.

Vice-Speaker Randel: This report of Dr. Scarborough will be referred to Reference Committee No. 1.

Have we any other reports of standing committees?

Dr. Murray, may we not hear from you?

REPORT OF COMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. Dwight H. Murray (chairman, Committee on Public Policy and Legislation): Mr. Speaker, Mr. President, members of the House and guests: My report will be rather brief but there are a few things I wish to call the attention of the Delegates to particularly at this time.

You will recall at the Interim Session Ben Read reported very well on the last legislative session. He gave you, so to speak, the box score and, if you will recall, that was quite favorable. Now, what happened, if anything, that made this session of the Legislature in a way one of the hardest sessions that we have ever had. Because of the number of bills and the length of time required of the Legislature, and the fact that the Legislature has to adjourn at a certain time, it was difficult. Therefore, these bills have to be pushed through in pretty fast order. It is very detrimental to our welfare for a bill to go through a committee without there being somebody there to hear what is going on and perhaps give the members of the committee some information that is needed. So, therefore, it takes a lot of manpower to keep up with these committees in Sacramento because there may be three or four committees meeting at the same time, all hearing something that has to do with medicine or public health.

That was our problem but, gentlemen, we were successful with the members of the Legislature. That is very simple. For many years we have been working with the elected candidates to the Legislature trying to inform them that you delegates, you men back home, have gone back to the grass roots, and have kept these men informed of the problems of medicine. They come to Sacramento informed.

Now, as to the problems that are to be met, there is less trouble from our office. That is very heartily appreciated by your Legislative Committee. I assure you that with the work you have done at home it has lessened the work of the Legislature by a great deal and has also made it much more effective.

Well, that is for the past but now what about the future? The future holds that we have a lot of work to do. For instance, we will start at the top. We have one United States Senator to elect. The incumbent, Senator Knowland, has been opposed by Mr. McKinnon and that campaign, I think, should interest every citizen in California and particularly should interest the members of the medical profession because it means a lot to have a man in the Senate of the United States that is familiar with the problems of medicine.

Then, coming on to the Congress. Instead of having to elect 23 Congressmen this year we have to elect 30. We have one man who is not a candidate for reelection to the Congress. He is opposing Senator Knowland. Then we have seven new places for these new districts that have been created so that makes eight new men to be elected to the Congress.

Gentlemen, we will say, before going on any further, that yesterday afternoon the legislative committees of the pharmacists, the dentists and the dispensing opticians, the hospitals and the physicians met and spent yesterday afternoon and last night in going over these various candidates. We have done our very best to select the men that we think understand our problems and you will hear before long through your county society and also from the key men in our counties the selection that was made by this committee yesterday. We went over this list of candidates for the Congress first, then came on down to our own State Senate. As you know, every two years we have an election in the Senate so every two years half of these men are candidates, that is, their term of office expires. That makes in California twenty State Senators that we have to elect this year. Of those twenty there are four veterans who are not seeking reelection. They feel that they have served their time and are not seeking to be reelected. We have then necessarily four new men to seat in the Senate.

I wish to say now that in one of these places, in Orange County, a man who was Assemblyman previously and at the present time is Speaker of the

Assembly. Sam Collins, is a candidate for the place that is being vacated by Senator Watson. In passing, I might say that no man has done more in the California Legislature for medicine than has Sam Collins. I want to say here that regardless of who his opposition may be, he is a tried and true friend and a man who knows the problems of medicine and we wish certainly to see that he is returned to the Legislature as a Senator.

Going on down the list of Senators, there are seven who are unopposed. That means, of course, that they are elected, so to speak. On the other thirteen we have rather active campaigns and you will be called upon, you men as Delegates, the key men over the state, will be called upon to keep these men informed of the problems of medicine so that they will know and can answer to their people on their stand on our problems.

Then coming into the Assembly, we have eighty Assemblymen, as you know, and of these Assemblymen there are fourteen who are not going to seek reelection in the Assembly. That will mean fourteen new faces in the Assembly. That presents a sizable job over the state and it is a job on which we will certainly ask for the help of you men. To do this job efficiently you will have to keep in contact and you will have to tell your friends of their feelings about the general health and public health of these men, their ideas, and the things that they stand for.

If we are going to be successful we must first register to vote. If you have not done that, of course, it is too late now but, having registered, let's do all we can as citizens of California to get out and vote at the election come June 3. If you will do that you will have then not only discharged your duty as citizens, but as doctors as well. Let's not have it pointed out again that the medical profession has not voted in toto. There are too many times and there are too many places in the whole country where the medical profession has not exercised its right of franchise; let's not have that said again.

One other thing with reference to the Legislature. I think this is of some interest to you and I wish to report on it briefly. That is the question of the crippled children. For some time it has been thought by many doctors that the Crippled Children's Act of California has been rather loosely administered even though it has been administered by the Department of Public Health. The question has been, who is a crippled child? First of all, who is a child? When does childhood end? In the second place, who is a crippled child and who says that so-and-so is a crippled child and who says he is not a crippled child? There has been a great deal of conflict about that. You doctors over the country have heretofore raised your voice in objection many times to things that have been done about crippled children and for the crippled children. You have seen instances where children have had to be transported a great many miles to have a tonsillectomy and all that sort of thing. You have been making these complaints for a long time and now you have a chance to speak your piece. This was brought about through two of the doctors of California, particularly one of our North Bay counties, Santa Clara County particularly. They went to their Assemblyman, Robert C. Kirkwood, and they told him what they thought about crippled children and the care they were receiving and the money that was being expended. So Mr. Kirkwood became interested in this and, in going over the budget, he found out that probably there might be some adjustment in the budget with reference to the care of these children; so to him is due very largely the credit of getting an interim committee for the subject of crippled children in California. This was given to the committee in the Assembly on public health. The chairman of that committee is Arthur Connolly, Jr., of San Francisco.

That committee wishes to make a survey and an impartial study of this whole problem and then report back to the Legislature at the 1953 session. Now, gentlemen, is your time and we are going to give you the opportunity because you will be called upon not only to write your opinions to Mr. Arthur Connolly, Jr., 130 Montgomery Street, San Francisco, or to the secretary of your county society and inform them of your ideas about the crippled children and care of crippled children. You will furthermore be advised by certain people from the state getting together the factual and true information. We wish that committee to have from the medical profession of California their ideas and the true picture of the care of crippled children in California and we hope that you will avail yourself of this opportunity. You have been asking for it for a long time. Now the opportunity is granted to speak your piece and I hope that you do it and have a direct, fair and impartial report so that this committee will be informed of the information to report back to the Legislature for the 1953 session.

I wish at this time to extend thanks to so many people in California that I couldn't possibly read all of their names, but we enjoy and appreciate the assistance that has been given us in Sacramento by the doctors of the state.

I want to tell you just one instance of a man and I will tell you who it was — Dr. Sam Randall of Santa Cruz. I don't know whether Sam Randall is here this morning or not but we don't do these things on short notice if we can help it. But one Sunday night—I believe it was on Sunday night—we found out that it would be very important and very helpful if we could have Sam Randall at Sacramento the next morning. We found that out about 9 o'clock at night so I called Sam Randall on the telephone and asked him if he could come up. He is like all other busy doctors. He had operations scheduled for the next morning and he told me about that and I said, "Well, I would like very much to have you come. We need you." Well, after talking to him a little bit and thinking it over he said, "All right, I will be there." He chartered a plane and was in Sacramento at 9:30 the following morning. Now, such cooperation we appreciate very much.

I mention this one case because that is rather unusual but many other doctors of the state have come to our assistance. Our president, our president-elect, our secretary, our executive secretary and all of the members of the Council, whenever they have been called upon, have come to our assistance. I never have called on anybody to help that they haven't done so wholeheartedly and that is why our legislative program is a success. This is a team problem. We cannot do it in Sacramento alone. Ben Read and Ed Clancy and our legal advisor are on the job constantly. Without them we would get nowhere very rapidly. I think Ben Read and Ed Clancy are very much like whisky. You know, it gets better with age and it doesn't seem that it has to be in wood necessarily for it to improve.

I have never heard any legislator nor have I heard any of the other members of the so-called third house ever criticize one of those men. They have said that they always tell them the truth and that is the slogan on which we go in Sacramento. I have said many times to the boys in Sacramento, "Now, look, we will tell them the truth. If that takes our shirts off, that is just too bad but we will let them have the truth," so I want you to know that that is the principle that is carried out. I want you to know what these men have done. Furthermore, in the past session, as in many or practically all of the past sessions, the doctors of Sacramento as usual rise to the cause. They have there the duty of taking care of the legislators and their families while they are in Sacramento and many of these legislators have to spend a lot of time in Sacramento other than the time that the Legislature is in session. Various committees are meeting there almost constantly. These doctors, without question, and never with a word of complaint, take care of whatever they are called upon to do. That is no small thing, gentlemen, in the whole legislative program.

Our public relations is a busy thing when we are working and taking care of patients. I wish to extend my thanks and appreciation to members of the legislative committee. I worked them pretty hard. I think I worked hard myself sometimes and you know when you work hard yourself you expect the other fellow to work hard. The members of the legislative committee have never failed me and they are always there when called upon. Again, I wish to let you know that this is team play, gentlemen, and as long as we consider it such we will be in a large way successful. It isn't any individual player that brings the results. Let's go home and see that the proper men are elected to their offices, men who know and understand the problem of medicine and public health in order that we can do more for our patients after the next session of the Legislature.

Thank you very much. (Applause.)

Vice-Speaker Randel: Thank you, Dr. Murray. Your remarks are always important and I am sure that each member of this House feels it is incumbent to take this message back to his component societies.

It is our purpose to expedite the deliberations of this House of Delegates. We do not wish in any way to limit reports. I am sure there are other reports outstanding on special committees. I know that Mr. Clancy as Director of Public Relations has a report to give us.

Mr. Clancy!

REPORT OF COMMITTEE ON PUBLIC RELATIONS

Mr. Ed Clancy (chairman): Mr. Speaker, members of the House of Delegates: Upon the recommendation of the Advisory Planning Committee and at the direction of the Council, the public relations department has been charged with the duty of encouraging a grass roots public relations program within all county societies.

This basic program encompasses the establishment of 'round the clock emergency medical care, making that care available to all regardless of ability to pay, and the formation of public service committees within the societies where the patient may have a forum for the presentation and adjudication of real or fancied complaints. Once all or part of the program is placed in operation, it is our further duty to acquaint the public with the accomplishments of the profession.

Translated into action, the precepts of the grass roots plan for the profession's public relations follow the proven program of "being good, doing good and then informing the public about your accomplishments."

To date, all or parts of the program are in effect in nearly every county society in the state. We will have succeeded in meeting our obligations to the public when—with the cooperation of the individual county society members—our program is in operation statewide.

The owners of California radio stations have been most cooperative in furthering their listeners' knowledge of the objectives and the scientific progress of medicine. As a public service to their audiences, and without charge to the profession, 27 radio stations are now carrying weekly programs for the county societies in their areas.

With such blanket coverage, it is our opinion, the programs are being heard throughout the state.

Since the radio station owners report fine acceptance of the programs, our experience indicates that —again with the cooperation of local societies—this phase of our efforts can be continued and expanded.

An important medium in carrying the profession's message to the people of California is newspaper advertising.

During the comparatively short time your Public Relations Department has been in operation we have placed a total of 786 announcements in 699 newspapers in 35 counties of the state.

These counties represent a population of 8,724,301, or 79 per cent of the state's total.

Nearly all of these advertisements have been placed in the hands of the individual publishers by members of the Advisory Planning Committee or the personnel of the Public Relations Department, at which time publishers were acquainted with the objectives of the profession's program.

Copy for all such advertisements is first approved by the officers of the individual societies and proofs are sent to the members before publication in the local newspapers.

Many of the announcements emphasize the training and qualifications of a doctor of medicine.

The advertisement, "Your M.D.," you may have noted, through the cooperation of the Los Angeles County Medical Association and C.M.A., is being published in the more than 200 daily and weekly newspapers of this county during the week of this convention.

Other copy is used to announce the perfection of 24-hour emergency medical care or the formation of public service committees.

In some counties the newspaper advertising has been used to tell the people about the accomplishments of the county society in some particular achievement in that area.

As an adjunct of the emergency care program, C.M.A. has made "Reminder Cards" available to members of the profession for distribution to their patients. Blank spaces are provided on the cards so the patient may write the name of his doctor and telephone numbers where he can be reached in case of an emergency. Patients are urged to post the cards near their telephones.

To date, 284,157 cards have been ordered by C.M.A.'s members.

These "reminders" will do much to eliminate confusion—with its sometimes negative publicity—when an emergency arises.

A.M.A. has produced a public relations plaque for use in physicians' offices. Because of its sincere and forthright language relative to physician-patient relationship, we've encouraged its use.

These plaques have been made available to all C.M.A. members at no cost and thus far 4,837 have been ordered. This record, we understand, is unequalled in the nation.

Services of the Public Relations Department are available—on call—to all county medical societies in any and all matters; in effect, we are at the command of all county society officers.

Routinely we carry on a publicity service in connection with the postgraduate meetings and other related activities of the profession at the state level.

Speeches are prepared for the profession to meet the growing demand for presentation before local groups. We encourage the idea of "more doctors meeting more people."

This brief report would not be complete without giving recognition to the fine support and cooperation of the elected officials of C.M.A. and the members of the Council and the officers of the county societies, Mr. John Hunton, Executive Secretary, the members of the Advisory Planning Committee and the enthusiastic and intelligent efforts of my two associates, Mr. Glenn W. Gillette of the San Francisco office and Mr. Jerry Pettis of our Los Angeles office.

VICE-SPEAKER RANDEL: Thank you, Mr. Clancy. The report will be referred to Reference Committee No. 1.

Again, the Chair wishes to advise the House that at the hour of 11:25 the order of business will be interrupted for the special broadcast.

Are there any other standing committee reports?

If not, we will proceed to special committees. Dr. Askey, do you have anything to report in connection with the American Medical Association House of Delegates? . . . Dr. Askey is not here.

Mr. Hunton, chairman of the Advisory Planning Committee, do you have anything?

MR. HUNTON: No further report.

VICE-SPEAKER RANDEL: Dr. John Upton, on the Blood Bank Commission.

DR. JOHN UPTON: No further report.

VICE-SPEAKER RANDEL: The chairman of the C.P.S. Liaison Committee. Dr. MacLean.

DR. MACLEAN: No further report.

VICE-SPEAKER RANDEL: At this time we will call upon the chairman of the C.P.S. Study Committee, Dr. Wilbur Bailey.

DR. BAILEY: This report will take thirty minutes and we wondered if you could have this House go further in the program and postpone our report until the first thing this afternoon.

VICE-SPEAKER RANDEL: Very well. That request will be granted.

The chairman of the C.P.S. Fee Schedule Committee, Dr. Burnham.

DR. DEWITT K. BURNHAM: Mr. Speaker and members: The report of the Fee Schedule Committee was printed. We wish to state, however, that 561 other questionnaires have been received and analyzed and they have not changed the schedule at all.

VICE-SPEAKER RANDEL: Thank you, Dr. Burnham, for that very fine report.

The Committee on Industrial Health, Dr. Leggo.

DR. CHRISTOPHER LEGGO: No further report.

VICE-SPEAKER RANDEL: In complying with Dr. Bailey's request we will interrupt the regular order of business and now proceed to old and unfinished business.

. . . Speaker Charnock assumed the Chair. . . .

SPEAKER CHARNOCK: We will now proceed to the report of Reference Committee No. 3 for the session of last December, and the Chair will recognize Dr. Lyle Craig, chairman of the reference committee for the last December meeting. Dr. Craig!

REPORT OF REFERENCE COMMITTEE
No. 3

DR. LYLE G. CRAIG (chairman): Mr. Speaker, members of the House of Delegates: The report of Reference Committee No. 3 is in your hands and was sent to you thirty days ago. It has been given to you again this morning. I think we might as well proceed with the report having to do with the constitutional amendments. We will probably be able to complete that before the deadline for the broadcast. I will ask Mr. Hassard to say a word to you about the chronological order of these amendments since there are several things in them which will be very confusing if they are not interpreted. Is Mr. Hassard in the room? Well. I am not legal counsel but my opinion of the thing is if you pass a constitutional amendment and subsequently pass another not in conformity to it you are in the second instance amending the constitution as already amended by the first one you pass. For example, the first constitutional amendment here places the Vice-Speaker as a member of the Council. The fourth constitutional amendment submitted specifies how the Council shall be elected and lists, under paragraph (b) (this is at the bottom of page two) that the President, President-Elect and Speaker shall be, and that takes precedence over Number 1 because it is subsequently passed and leaves out the Vice-Speaker so, if you pass Number 1, and then pass Number 4 fifteen minutes later, you have elected the Vice-Speaker as a member of the Council for approximately fifteen minutes.

Here is Mr. Hassard now. Let him explain this to you. Would you make a few remarks about the legality of this, Mr. Hassard?

Mr. Hassard: If you have before you the first two pages of the report you will notice that there are four constitutional amendments pending before the House. They appear in the report in the order in which they were introduced a year ago. It is not necessarily the order in which they should be acted upon. Three of the amendments are in one respect or another in conflict with each other. Now, that doesn't mean that you can't pass all three. You might if you wish but, in doing so the House should understand what the consequences would be if it passes one in advance of the other and vice versa.

Let's take first the last one, amendment number 4. Amendment number 4 would make, if adopted, two changes. It will make one change in the present composition of the Council. It will eliminate the Councilors-at-Large and it will eliminate them immediately that goes into effect.

Going back to page two, constitutional amendment number 3 likewise will eliminate the Councilors-at-Large but provides the incumbent Councilors-at-Large will serve out the remainder of their term, so that if number 4 is adopted the Councilors-at-Large that are now in office would go out of office immediately, whereas if number 3 is adopted the incumbents will remain for the balance of their terms.

If both are adopted the last one passed will prevail, so that in determining your vote bear in mind that if you desire the Councilors-at-Large to be removed from the Council then make up your mind whether you wish them eliminated at once or as their term expires.

Then the method. Number 1 on the first page adds to the Council a new position, that of Vice-Speaker. At the present time the Vice-Speaker is an officer of the Association but not a member of the Council. Amendment number 1 would add him to the Council. On the other hand, amendment number 4 reaffirms the membership of the Council, including the District Councilors, the President, President-Elect and Speaker with no reference to the Vice-Speaker; so. gentlemen, if you desire to add the Vice-Speaker to the Council you should adopt number 1 first. Then, at the same time, if you should desire to remove the Councilors-at-Large and you later adopt number 4, you would take the Vice-Speaker off and you would have put him on a few minutes before, which might not be your desire at all.

Number 4 is the most drastic. You could act upon the first and not jeopardize subsidiary things. If you delete number 4, then the problem Dr. Craig mentioned doesn't exist and if you pass number 4 then you proceed to determine whether or not you wish the incumbent Councilors-at-Large to remain in office and then, if you proceed to number 1, whether you did or did not so act in reverse, number 4 first and then number 3 and then number 1, you could accomplish whatever the desires are without having the by-products involved that you might not wish.

Speaker Charnock: Dr. Magoon.

Dr. Leslie B. Magoon (Santa Clara County): Mr. Speaker, I move that the chairman of Reference Committee No. 3, in consultation with legal counsel rearrange the order of consideration of the constitutional amendments so that the will of the House could be made more clear with less confusion.

Speaker Charnock: Is there a second to that?

. . . The motion was variously seconded. . . .

Speaker Charnock: It has been moved and seconded that legal counsel and the chairman of Reference Committee No. 3 have a conference and all of those in favor will signify by saying "aye" and contrary "no."

. . . The motion was put to a vote and it was passed. . . .

Dr. Craig: Mr. Speaker: I want to thank Dr. Magoon for his consideration but we have already had a conference and decided to do it this way. I asked the Speaker and legal counsel if there was any reason for presenting them in the order they were presented and they agreed there was not, so we thought we would consider number 4 first and then number 1 and then number 2 and then number 5 which has nothing to do with the others.

Speaker Charnock: The Chair rules that the chairman of the Reference Committee may take them up as he desires.

Dr. Craig: We haven't very much time. We have to take them in some order and I was just trying to consider whether number 3 should go ahead of number 4 which would obviate that number in event number 4 is passed and we will have some Councilors-at-Large anyway. If number 4 is lost, why, half your problem is gone and then we can go back to number 3 and we will still have them so we will come out the same way anyway.

Speaker Charnock: Let's take up number 4.

Dr. Craig: Resolved, that Article III, Part B, Section 9 of the Constitution be amended to read as follows:

"The Council shall consist of:

"(a) Eleven District Councilors elected from the Councilor Districts specified in this Constitution;

"(b) The President, President-Elect, and Speaker. In addition the Secretary-Treasurer and Editor, but without the right to vote.

"Anything in the Constitution and By-Laws which is in conflict with the foregoing is hereby repealed."

The Chair will tell you that that requires a two-thirds vote. The committee recommends that this amendment do not pass. I move the adoption of this section of our report.

SPEAKER CHARNOCK: Is there a second?

DR. E. T. REMMEN (Los Angeles County): I will second it.

SPEAKER CHARNOCK: It is open for discussion on amendment number 4.

DR. REMMEN: I would like to say that the constitutional amendment number 4 was submitted by me last year as an outgrowth of deliberations of the first committee and to some extent the second committee which worked on the new Constitution. The points involved here are definitely controversial and since it was feared that their inclusion last year, when the Constitution was proposed for adoption, might prevent action which would be necessary, these items were withdrawn with the understanding that they would be offered this year for consideration.

I have no personal feeling in particular one way or another. I think it is a matter of fundamental parliamentary procedure which should be perhaps considered for a little while anyway. It was the intention of the committee which made the first draft of the proposed revision of the Constitution to attempt to establish as far as possible a bicameral or a two-house control of government of the State Medical Association. It was the feeling that there had been, probably over the past fifty years of the California Medical Association's existence a pretty strong tendency to play follow the leader. Perhaps that isn't necessary. Perhaps the House of Delegates can be expected to form its own opinions. If that is the case, the procedure under which we have long operated should not be changed.

It was the feeling of the committee, however, that when you gathered together a large number of practicing physicians from the grass roots who have not been in close touch with all the high-powered salesmen and all of the propaganda to which medical society officials are exposed that sometimes the sound, extensive judgment of this group of men who are actually practicing medicine may be very sound and that it may be a counter-check to the sometimes too enthusiastic advocacy of certain procedures by officers and Councilors of the Association.

I think if we look back far enough and consider things like the Dodd survey and the Foote, Cone and Belding survey, which was the cause of compulsory health insurance, our adoption of C.P.S. in the form in which it was, are very heavy and extensive expenditures for public relations which may or may not have backfired upon you, that almost any of those things might have been handled more wisely had the House of Delegates been permitted to go into session alone and free from influence and prejudice of the officers to consider these things.

In order to do this the committee originally felt that it would be advisable to remove the Council from the House of Delegates and let the Council deliberate by itself and let the House of Delegates deliberate by itself and, although the Council could always send messages, you would ultimately be separating the deliberative bodies and separate them all except one state of union. That has been found the most successful and probably the soundest procedure. You should put the House of Delegates on its own. It could ask for advice. It could invite representatives of the Council and the officers to come in and it could ask for legal counsel but it would make its decisions alone, just as the boys from the home towns do. It would consider what the Council recommended but it would not be subject to a lot of oratory and a lot of salesmanship as has been the case in the past.

Now then, if one eliminates the Council from the House of Delegates it has accomplished the reason for eliminating Councilors-at-Large which was simply that under that setup it was proposed to make the House of Delegates effective in proportion to the population as a house of representatives and to make the senate or the Council elected geographically. The District Councilors are elected geographically and your House of Delegates then would be entirely in proportion to the population. If you put in the Councilors-at-Large then the House of Delegates is in the position that we consider the assembly is in as, after having been elected by the people, then they elect their own bunch. It makes for horse trading, for jockeying, for bitterness and for hard feelings and, as the Councilors-at-Large pass from one year to another, it tends to favor the big cities.

As I say, this is basic parliamentary procedure. If you feel that the House of Delegates is capable of transacting business without being addressed by officials of the Association and know what to do, and if you feel that the House of Delegates is not competent to do this and they require direction, then all of the Councilors should be left back in as they are in the House of Delegates.

I might while I am up here, because I don't want to speak again, speak about the second constitutional amendment which was introduced by myself. It says:

"The House of Delegates shall consist of:

"(a) Delegates elected by the members of the component societies as provided by the By-Laws;

"(b) Officers of the Association as designated in Article VI, Section 1 of this Constitution. Excepting the Secretary-Treasurer and the Editor, they shall have the right to vote."

That would eliminate District Councilors from the House and also Past Presidents. There is ample argument, by the way, on the matter of Past Presidents. It can be argued that Past Presidents contribute much in wisdom and experience and to this extent they are helpful. Other organizations feel that Past Presidents may perpetuate old feuds, that they may exert undue influence upon a number of delegates; so do as you like, as it isn't personal with me. It is purely a presentation of the point of view that was held by a good many of the committeemen who worked on the matter. Thank you.

. . . The question was called for. . . .

Speaker Charnock: Thank you, Dr. Remmen. Is there any further discussion or are you ready for the question? Dr. Askey.

Dr. Askey: The question before the House as I understand it is the adoption of this report of the committee—is it?

Speaker Charnock: Correct.

Dr. Askey: That is not exactly correct because these are amendments to the Constitution and is not the question on the adoption or rejection of the amendment rather than this report, sir?

Speaker Charnock: Your point is well taken, Dr. Askey. Are you ready to vote?

The Chair will rule that an affirmative vote is for the amendment and a negative vote is against the amendment and a two-thirds vote will prevail.

Those who are in favor of the amendment designated as number 4 will please stand and then those who are opposed will please stand.

. . . A standing vote was taken on the amendment. . . .

Speaker Charnock: The amendment is lost.

At this time we will proceed to our broadcast.

Just before we do that, I should like to report that Dr. Robert A. Peers, Past President, has come into the House. Dr. Peers, please stand. (Applause.)

Before we go into our broadcast I have another nice duty and that is to present to this House of Delegates three members of the Junior A.M.A. organization and their medical schools:

Mr. Gene Wisley from the University of Southern California. (Applause.)

Mr. Frederick Sobeck from the University of California at San Francisco. (Applause.)

Mr. George Hurwitz from the University of California at San Francisco. (Applause.)

We are very happy to have these gentlemen with us now.

I will now turn the meeting over to Ned Burman.

Mr. Ned Burman: Thank you, Mr. Speaker.

Members of the House of Delegates: Once again it is our very pleasant duty to present a broadcast the length and breadth of California, bringing the people the remarks of the incoming President of the California Medical Association. Before we actually launch on the program I would like to explain once again what we have done in the past. It will be very helpful if you applaud in the proper places, at the beginning of the program and at the conclusion and kindly hold your applause during the actual presentation of the address for the sake of our timing as it will prevent any hitch. Please hold the applause until the very last comment and we will give you the cue when to come on loud and then your crescendo of applause and we will break it down that way. The broadcast will be heard on the Mutual Don Lee network over twenty stations. You will hear it in Los Angeles over Station KHJ at 7:30. Now, we are about ready to cut the tape. Are we all set? We will open the program with applause. So I will give you the cue and then fade you down.

Good evening, ladies and gentlemen. We greet you from the Biltmore Hotel in Los Angeles where the California Medical Association is gathered for its 81st Annual Session. This special event broadcast is coming to you from a meeting of the House of Delegates of the C.M.A. The physicians assembled here are the governing body of organized medicine in California. The delegates represent their professional fellows throughout the 58 counties of this great state.

Now, the Speaker of the House of Delegates, Dr. Donald A. Charnock of Los Angeles, will introduce the new President of the California Medical Association. Dr. Charnock.

Speaker Charnock: Members of the House of Delegates, ladies and gentlemen of the radio audience: It is now my honor and privilege to introduce to you the new President of the California Medical Association, Dr. Lewis A. Alesen of Los Angeles. Dr. Alesen! (Applause.)

(Dr. Alesen's speech was printed in the June issue of California Medicine *on pages 367 to 369)*

Mr. Burman: So concludes this special broadcast from the 81st Annual Session of the California Medical Association. You have heard the inaugural address of the incoming president of the C.M.A., Dr. L. A. Alesen of Los Angeles. He was introduced by the Speaker of the House of Delegates, Dr. Donald A. Charnock, of Los Angeles. This is Ned Burman, speaking from the Biltmore Hotel in Los Angeles. (Applause.)

Speaker Charnock: Thank you, Dr. Alesen and thank you, Mr. Burman. It is hard to go back to business after hearing a stirring address like that.

I am going to ask Dr. Craig to resume considerations of the amendments.

REPORT OF REFERENCE COMMITTEE No. 3 (Continued)

Dr. Lyle G. Craig (chairman): The next amendment which is number 3 on page two of the committee's report, is that which eliminated the Councilors-at-Large and also the machinery by which the House challenges or may challenge elective district councilors. The arguments which the committee found against it are printed on the page and it is not necessary to repeat them here. The committee also recommends that this amendment do not pass.

Mr. Speaker, I move the adoption of this part of the committee's report, or do we vote on the amendment?

Speaker Charnock: We are voting on the amendment.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Is there any discussion on that amendment?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those who are in favor of this amendment will please stand. (Standing vote.) The amendment is lost. You will proceed.

DR. CRAIG: The next constitutional amendment is on number 1. Number 1, I believe we said, we would vote on next because it has to do with the Council while number 2 has to do with the House of Delegates so we will present constitutional amendment number 1 which is the first one printed on page one of your report. That merely asks that the Vice-Speaker be a member of the Council.

We recommend that this amendment do pass.

. . . The motion was duly seconded. . . .

SPEAKER CHARNOCK: Is there any discussion?

If not, those in favor of passing this amendment will signify by saying "aye" and to the contrary, "no."

. . . A vote was taken on the amendment and the motion was carried. . . .

SPEAKER CHARNOCK: The amendment is passed.

DR. CRAIG: The next constitutional amendment, number 2, has to do with the composition of the House of Delegates. It is printed on page one and the feelings of the committee are also printed there. We feel that the House of Delegates should have the advantage of the consultation and experience of the Council and Past Presidents. We therefore recommend that this amendment do not pass.

Mr. Speaker, I move the adoption of this amendment.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Is there any discussion on this amendment number 2?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those in favor of passing this amendment will signify by saying "aye" and those to the contrary "no."

. . . A vote was taken on the amendment. . . .

SPEAKER CHARNOCK: The "nos" have it and the amendment is lost.

Will you proceed?

DR. CRAIG: The final constitutional amendment, number 5 on page three of our committee's report, I think is very clear to all of us as to just what it does. The capitalized portion of the amendment is the insert into it and it restricts the Council in its expenditure to not more than 25 per cent of the budget without permission of the House of Delegates. We felt that there was a controversy on this. We discussed it to some length but finally decided as reported in the report. The committee therefore recommends that this amendment do pass.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Is there any discussion?

DR. STANLEY TRUMAN: I have been on the budget committee for several years. I am chairman of the reference committee that is going to consider the budget this year and it seems to me that we are in session here as the California Medical Association. When we are not in session the Council is the California Medical Association. It seems to me without any great feeling one way or the other that it would be unwise to handicap the Council in passing the amendment. I would like personally to hear an expression of opinion by some member of the Council with regard to the advisability of this amendment before I vote upon it.

SPEAKER CHARNOCK: Mr. Chairman, will you report?

DR. SIDNEY J. SHIPMAN: I would like to thank you, on behalf of the Council, for your recent vote which I take to be an expression of confidence to the Council. I must say that the members of the Council have worked hard and they have worked in representing the C.M.A. and they have done a good job. If you pass this amendment I think it would not handicap the Council in any particular degree except in the event of an emergency. In the event of an emergency it is quite likely that we could call the House of Delegates into session as we have done on occasions in the past. However, because it would limit the Council in its action representing the House of Delegates when the House of Delegates is not in session, I personally am going to vote against the amendment.

SPEAKER CHARNOCK: Is there any other discussion on this amendment?

DR. MAGOON: I would like to discuss a technical point that has no bearing on the merit of the amendment and that is the wording. I would like to have the wording corrected without vitiating the meaning of this resolution. The use of the word "regular" applies to the session at which the budget is adopted. The word "regular" applies to both the annual and the interim session and, of course, the word should be at that point "annual" and with counsel's permission I think that should be corrected.

MR. HASSARD: I believe the correction could be made as it doesn't change the sense of the amendment at all; in fact, it would only conform to the terminology as to the remainder of the constitution.

SPEAKER CHARNOCK: I will accept that change if the House concurs. You evidently do and, as it reads now, you will vote upon the amendment and if those in favor of the amendment will please stand.

. . . A standing vote was taken on the amendment. . . .

SPEAKER CHARNOCK: Now those opposed will please stand.

. . . A standing vote of those opposed was taken. . . .

SPEAKER CHARNOCK: The amendment is lost.

Will the chairman of Reference Committee No. 3 proceed.

DR. CRAIG: I might say the reference committee does not feel greatly disturbed at your refusal to accept our recommendation because it was quite controversial and we didn't quite know how to recommend.

We proceed now to the resolutions which were presented at the December session.

Resolution number 1 was in regard to Madera County and the matter of the Madera County Medical Society was acted upon at that time.

Resolution number 2, printed on page four of the report, was that which attempted to clarify a situation regarding the interim session. Our feeling on that is so completely expressed in the report that we need hardly go further except to say that the substitute resolution which is also printed in the report is at so great a variance and so much more inclusive than the resolutions that are presented to you that the legal counsel, Mr. Hassard, has felt that it should be presented to you as a new resolution. It will be presented today for reference to a committee in order that you may vote on it at the Tuesday meeting. Therefore, since we are not accepting this or are not presenting ours exactly as a substitute on his advice, the committee feels that we should recommend a do not pass on the resolution now before you on the amendments.

Mr. Speaker, I so move.

Speaker Charnock: Is there a second?

. . . The motion was seconded. . . .

Speaker Charnock: Does anyone wish to discuss this?

All of those who are in favor of the report of the Reference Committee which will kill this resolution will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote and it was carried unanimously. . . .

Speaker Charnock: It is not passed and will you proceed. The amendment is not passed and the motion is carried.

Dr. Craig: Arguments in favor of the new resolution have been presented in the report but they will be deferred for action on Tuesday evening.

Resolution number 3 introduced by Dr. Shipman had to do with the wording of Chapter V, Section 2 and, as was explained to the House of Delegates at the December meeting, it doesn't mean anything. It was also so explained in the Journal and so no action was needed. I believe that if Dr. Shipman does not care to withdraw this and if it has to go to vote we move a do not pass because it doesn't do anything.

Speaker Charnock: The Chair will rule that we do not need to vote on it seeing that the matter is already covered. If there is no appeal, we will proceed.

Dr. Craig: Resolution number 4 was introduced by Dr. Lambertson and it had to do with a recommendation of this House of Delegates as to the administrative members of the California Physicians' Service. The reaction of the committee is well presented in the report; as a matter of fact, it merely advises us to recommend our sitting in another capacity and the purpose of the resolution would seem to us was already met by calling it to our attention. The situation should be clarified somewhat and we would recommend that the resolution do not pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. If you vote "yes" you will defeat this resolution. Those who are in favor of this section of the report will signify by saying "aye" and to the contrary "no."

. . . The motion was put to a vote and the motion was carried. . . .

Speaker Charnock: You may proceed as the resolution is lost.

Dr. Craig: Resolution number 5 introduced by Dr. Gibbons of San Francisco County has to do with classification of health insurance plans, both public and private, throughout the state. Our feeling is the same as it was last year when almost exactly the same resolution was introduced by Dr. Parker and rejected by the House. We have expressed our opinion and last year Mr. Hassard expressed his, which was that it would not be desirable and we have not changed that opinion. The committee recommends that this resolution do not pass. I would like to say that we are completely in sympathy with the idea as somewhere the people of California need to find out just what they are buying when they buy health insurance but we don't believe this is a desirable method of classification. I move the adoption of this section of the report.

. . . The motion was seconded. . . .

Dr. Burt Davis (Santa Clara County): May this resolution be amended at this time or are these resolutions fixed by this report?

Speaker Charnock: I will rule that they may be amended at this time.

Dr. Davis: I do feel that this resolution and the resolution offered last May have a great deal of merit. I think that possibly the objection to this resolution as it has been presented is that it is too all-inclusive, too detailed and it would be rather cumbersome to set up. I should like to move amending the resolution to eliminate paragraph 6 and paragraph 8 and paragraph 9 and then also move to change the phraseology in paragraph 7 to, "*Resolved:* That approval may be granted to these forms of health insurance policies, et cetera," and by inserting, "and be it further *Resolved:* That the Council shall formulate such rules required and qualifications as may be required for implementation of this program."

My opinion in the amendment is that all industries seem to be very jealous of the seals of approval that are given by Good Housekeeping and various organizations and we don't have to require insurance companies to bring their policies forward for inspection but if we set up a set of qualifications and say, "Now, if you want to, you can bring your policy in if it meets the qualifications that we have set up," and then we will say that it is a good policy. If we do that, at first some of them may be a little timid but competition is pretty keen among the insurance companies and when they realize the value of having a seal of merit, then I think that we will find that it won't be at all difficult for us to promote this plan. As far as grading them is concerned, we are not grading them. We are merely saying, "If you jump over the hurdles, it is yours," so that if any insurance company brings forth any argument that they will become classified C when they should be classified A and so forth and so on, we can look into the situation.

Mr. Chairman, I should like to move these amendments.

Speaker Charnock: Is there a second to this?

. . . The motion was seconded. . . .

Speaker Charnock: We will refer this to Reference Committee No. 3 and Dr. Davis, if you will confer with Reference Committee No. 3, they will take this up and they are to report back at the end of the recess, if possible, and, at this time with the approval of the House, we will declare a recess until 1:30 this afternoon.

. . . The House of Delegates recessed at 12:00 noon, to reconvene at 1:30 p.m.

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SUNDAY AFTERNOON SESSION
APRIL 27, 1952

The Sunday afternoon session of the House of Delegates was called to order at 1:45 p.m. by the Speaker of the House, Dr. Charnock.

Speaker Charnock: Will the House please be in order.

We have several announcements to make.

. . . Announcements by the Speaker. . . .

Speaker Charnock: At this time, with your permission, we will hear the report of the C.P.S. Study Committee. Dr. Wilbur Bailey, chairman, will make his report at this time. Dr. Bailey.

REPORT OF C.P.S. STUDY COMMITTEE

Dr. Wilbur Bailey (chairman): I plan to make a few remarks about the background of the committee and its work on our present interim report. As you will recollect, Dr. DeWitt Burnham was the chairman of a Committee of Eight to look into California Physicians' Service fees, while I am the chairman of this Committee of Fifteen. It is my understanding that these committees are generally known as the "Burnham and Bailey" committees, and there is no doubt about there being a circus when all fifteen members had a different opinion on the same subject, and yet withal, after we spent some fourteen hundred doctor hours, exclusive of travel time, we have come to a remarkable unanimity of opinion on the problems before us.

Incidentally, we also spent for expert advice less than three-tenths of the total sum which this House appropriated at its last meeting.

The report which you will hear was written by three different individuals with so many drafts on the final product that we all lost count. This committee has attempted to find answers, not merely by collecting the opinions of its members, but by calling witnesses who could give specialized knowledge on the subject. How do plans go in Michigan, Massachusetts, New York and Illinois? The chairman and some members have visited these localities.

How do the California Physicians' Service policies compare with plans in other states? Mr. Joseph Linder, a partner of Wolfe, Corcoran and Linder of New York, consulting actuaries, accountants, and auditors for Blue Shield and Blue Cross in many other states, made a study for us.

The Michigan Medical Service, a plan similar to California Physicians' Service, covers two million members in a state which has a population of five million. To tell us why the doctors like it, and how even though the plan once paid less than a hundred cents on the dollar, all doctors who took less have now been paid in full, Dr. Robert L. Novy, the medical head, and Jay Ketchum, his executive secretary, appeared before the committee.

DIRECT ACTION NEEDED NOW

Although the committee has spent many a long week-end in discussion, there are numerous points in which there is not yet complete agreement. It is a vast job for doctors to learn the intricacies of the insurance business. However, California Physicians' Service has lost about 25 per cent of its subscribers in the past year; it is engaged in a bitter conflict with Blue Cross in the Southern California area; some believe it should be abandoned altogether; and we have all been bathed by undesirable publicity as a result of the so-called "chiseling" by a handful of doctors. The iron is literally hot. Under such conditions philosophical speculation as to cause and effect may be interesting, but what we need is direct action, and now.

I am a little bit reminded of the young husband, an expectant father, who took his wife to the maternity ward of the hospital. Just as he finally left her he said, "Darling, do you think we really want to go through with this?"

Furthermore, this House meets but rarely, and, therefore it is our duty to submit as many concrete proposals as possible to the Delegates. Too many times this House has met, had resolutions introduced on the subject of California Physicians' Service, seen them go to a reference committee, and then adjourned without seeming actually to have come to grips with the real problem. The doctors, as we find from our psychological study, react to this process by a feeling of frustration which gets greater every year.

DANGER OF VESTED INTERESTS

We are continually being assured that all medical care problems would be solved if we would just allow the government experts to take over. Fortunately we have refused to yield our birthright. If we have made mistakes, and we have, we do not, as in England, have to appeal to a government bureau. We have so far escaped the great curse of plans in foreign countries—the politically-appointed government health insurance job holders, who are often actually more numerous than the doctors. Security in their jobs soon becomes much more important to these appointees than does the welfare of patients.

We must be honest, however, in admitting that we ourselves have not entirely escaped the influence of the vested interest. We would be remiss in our duty if we did not call attention to the bitter conflict which has recently broken out between Blue Shield and Blue Cross in Southern California. Medical services and hospital services are complementary to each other, are natural allies, and almost everywhere share joint offices. About a year ago the Council of the California Medical Association was notified in a perfunctory manner that a division between Blue Shield and Blue Cross had taken place in Southern California. Neither the Council nor the House of Delegates has until recently heard details. Now a full-scale conflict is raging, with Blue Cross stating, "Join our plan and be indemnified for doctors' services. We have sold 250,000 policies in a year and a half, while California Physicians' Service sold only 650,000 in thirteen years"; and California Physicians' Service writing letters in a similar vein saying, "Use our medical service plan. We sell hospital coverage also," as it tries to capture the 200,000 members still remaining in the "joint" account; it is high time for us to take stock of the situation.

Does such a schism mean "better care for the patient"? No. The patients are confused, bewildered, and naturally mistrustful of the whole affair. Do the doctors want it? No. For practical purposes they were not consulted. We spoke a moment ago of empire building—the great curse of government employees. The larger the staff controlled by a civil servant, the greater his responsibility, his authority, and his pay. It appears to the committee that a handful—nay, even half a handful—of individuals were responsible for the break between California Physicians' Service and Blue Cross, and all the needless and expensive confusion and reduplication of offices and effort it entails. We believe every effort should be made to repair this tragic schism, for it is absolutely contrary to the welfare of patient and doctor.

Suggestions have been made that doctors should not be in the insurance business. If we abandon California Physicians' Service, could insurance companies be relied upon to carry the load, light or heavy? Los Angeles doctors had an example last December of what insurance companies do when policies do not produce profit to their liking. About half the members of the county medical society had placed sickness disability insurance on their employees with private carriers as a gesture of support to private enterprise. A slight increase in benefits was made by the government, which became effective last fall. As a result, and because medical assistants used such coverage freely, the doctors of Los Angeles County were notified a week before last Christmas by the private carriers that this type of insurance would be canceled as of January first, and the state could take over. A fourteen-day ultimatum with no alternative!

Others beside commercial carriers are competing to cover the medical care field. Blue Cross, founded by physicians, although it originally agreed to stay solely in the hospital care field, soon added such phases of medical care as laboratory, x-ray, anesthetics, and so forth, as a sales inducement. Blue Cross now covers the entire field of doctors' services with indemnity contracts in Southern California.

Permanente and similar plans in which the patient does not have free choice of physicians would, if California Physicians' Service were abandoned, undoubtedly take over many members. The Permanente Foundation is now building a $3 million, 225-bed hospital in San Francisco, and another in Los Angeles, to be part of their present system of clinics and hospitals. The following figures on their membership give an idea of the rapidity of growth:

April	1949	80,000
	1950	121,000
	1951	170,000
	1952	215,000

It is well to consider who else might be interested in medical care before we lightly discard what we already have. C.P.S. is an opening tool on the same big order which is now being promised by the government, complete medical care for everyone in the low income group. As time is fleeting, it is becoming readily apparent that medical care insurance, like fire insurance, has to conform to certain definite rules. It has to follow the simple rules of insurance and the illness of the patient must be beyond the control of the patient and under such circumstances the amount of risk can be calculated from an actuarial standpoint. There must be no incentive to get your money's worth. The number of actual emergencies can be calculated from past experience and the amount of diagnostic procedure judged necessary by doctor or patient is incalculable. Lastly, any type of insurance must pay out less than it takes in.

These are the five basic policies of C.P.S. plus innumerable variations, all of which are violating at least one of these simple basic rules. It is simply not possible, for example, to expect an insurance plan to cover a visit from a doctor every time grandma has a twinge of rheumatism and feels lonely. However, C.P.S. has no monopoly on such problems and, in the present attempt to cover all of these points, one large commercial carrier lost $1,200,000 last year which represents 16 per cent of this sort of coverage.

Blue Cross has raised its rate eight times since August 1950, to a total amount of 34 per cent, including last week. One came along then and I didn't put it in because I didn't know the percentage but I am told today it is a 20 per cent raise across the board.

To some of us the committee's progress has seemed exasperatingly slow. To others it has seemed dangerous to proceed at a more rapid pace with our decisions. We are in unanimous agreement that the problem is vast and that the better the doctors understand it, the more charitable they become in their outlook. Actually, of course, in this last statement is much of the meat of the coconut, for unless all doctors learn more about the vicissitudes, pitfalls, and problems faced by medical care plans, their cooperation cannot be expected.

Patients, too, cooperate when they understand the problem. As you will hear, the innumerable varieties of policies are at the present time completely confusing to both doctor and patient. It is to be hoped that by means of simple diagrams on California Physicians' Service cards of identification, a patient can be shown what particular type of insurance he is carrying. A patient who can see by means of diagrammatic comparison, for example, that his particular policy covers less, and likewise costs less than other fuller types of coverage, is likely to be more satisfied than one who has assumed everything was covered until his illness proved differently.

Now that you have heard some of the background, by way of dividing the load I shall ask Dr. Leslie Magoon to read the formal report. He, incidentally, has been of particular help in combining the amino acids which we all created into the final protein—and its wrapper.

I want to call your attention particularly to the fact that by even touching on subjects, the committee has opened the avenue for amendments or changes by this House. If anyone believes, for example, that the committee should have advocated a more definite plan for indemnity insurance, or should have been more specific about ceilings, recommendations can be made in the reference committee and the proposition put before the House, so that the final report will be appropriately amended.

Dr. Magoon, will you please continue with the formal portion of our report.

Dr. Leslie B. Magoon: Mr. Speaker and members of the House: This is the formal report of the California Medical Association Study Committee on California Physicians' Service presented to the Council and now presented to you in accordance with the instructions of the Council.

PREFACE

It has become more and more obvious in the twelve years since California Physicians' Service was organized that its operations have resulted in dissatisfaction on the part of many of its physician members, and even in open enmity on the part of others. This discontent had, last year, finally grown to the point where it became apparent that a determined effort must be made to discover to what factors it was due, and whether or not any of them were correctible.

The method by which this House chose to make this effort was by requesting the Council to appoint a special committee to study the whole problem. The resolution follows:

"*Resolved*, That the Council of the California Medical Association be urgently requested to appoint a representative committee to ascertain the expectations of the medical profession of California in regard to California Physicians' Service in the whole field of voluntary prepared medicine."

This report is an interim, progress report of that study.

Your committee accepted this resolution as a broad directive for a searching investigation of fundamentals. It propounded to itself what it believed were the basic questions concerning not only California Physicians' Service, but health insurance as a new element concerned with the economies of medicine. Intelligent and dependable answers could be based only on valid and accurate data. Even so, many of the solutions must, in the final analysis, be matters of opinion, but at least that opinion should be the opinion of experts rather than of uninformed amateurs.

The first phase of the study, therefore, became a series of inquisitions of witnesses representing every element concerned in health insurance—actuaries, businessmen, legislators, labor leaders and representatives of Blue Cross and Blue Shield plans, including our own.

These included, from C.P.S., Ransom Cook, K. L. Hamman, Dr. T. Eric Reynolds, Dr. Donald Cass, Mr. William Bowman. Others were Dr. Robert L. Novy and Mr. Jay Ketchum of Michigan Medical Service; the Honorable Samuel Collins, speaker of the Assembly; George Johns, secretary of the San Francisco Labor Council; J. Philo Nelson, executive director, and Dr. H. Gordon MacLean, president of Hospital Service of California; Dr. William Bender, Mr. Howard Hassard and many others.

Consultants retained by the committee were Joseph Linder and S. Fenichel of Wolfe, Corcoran and Linder, New York, actuaries, accountants and auditors for Blue Cross and Blue Shield plans throughout the nation, and Ernest Dichter, Ph.D., New York, psychological consultant in advertising and marketing. Reports of these consultants are available for review.

Our executive secretary was Rollen Waterson.

An immense amount of valuable material was accumulated—so much that its evaluation and codification became a real task. The accumulated data, and this report, have been organized on a basis that is consistent with the medical man's approach to a problem, and to his way of thinking—that of first making a diagnosis, and then attempting treatment. The parallel can be carried further: Our study has progressed to the point where we believe a fairly complete and accurate diagnosis can be made. The diagnosis is multiple. For some factors we are prepared to recommend treatment. For others our recommendations are not yet formulated. For still others we are forced to say that for the present palliation is the best that can reasonably be offered. For still others there cannot be even palliation, for they arise from conditions inherent in the changing economies of modern medical care with which we shall have to learn to live.

DIAGNOSIS

Our first, most easily made, and most obvious diagnosis is that there is confusion in the minds of the medical profession as to the objectives of C.P.S. And, upon this problem of objective rests the answer of the fundamental question of whether or not C.P.S. should continue to exist. We in the California Medical Association must accept the responsibility

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for having failed to plot the course which C.P.S. should take, and with a confused pilot, the best ship will go aground. The medical profession must first decide what role it wants C.P.S. to play, and then must state in terms of crystal clearness what it is. With C.P.S. given an assignment about which there can be no confusion, we shall then better be able to evaluate the adequacy with which C.P.S. accomplishes its mission.

Physician discontent is properly a symptom to the extent that it is only a derivative of other factors, of which lack of a clear objective is an example. But it is part of our diagnosis, too, because to perhaps a greater extent it is an expression of objection to necessary rules and regulations, to impatience with failure of C.P.S. to develop more rapidly a mature plan, and a lack of realization of the immense complexities involved in attempting to apply the insurance principle to a personal service (as your committee found out).

One item that your committee has not included in its diagnosis is inadequate financial return to the physician. Your committee believes that if various suggestions, some offered now and others which we beg to keep under still further consideration, can be adopted, and, that if the fee schedule be consistent with the income level of beneficiaries to whom it applies, physicians' objections on this score will become minimal.

In addition to these problems of major magnitude, a number of lesser problems which are, to some extent, subordinate both in importance and in necessary sequence of their consideration, round out our diagnostic study. Among them are:

1. Multiplicity of contracts. At the present time, C.P.S. has in force a variety of modifications of its basic contracts. We believe the multiplicity of contracts is one of the correctible sources of irritation to the doctor and of misunderstanding of coverage on the part of the patient.

2. Method of payment. We believe that a fiscal system which does not give to the patient some tangible evidence of the return to him resulting from his foresight and acumen in purchasing health insurance, denies his desire for independence and keeps from him knowledge of what C.P.S. has done for him. It is only by creating a feeling on the part of both doctor and patient that C.P.S. is the agent of each and master of neither that a solid footing for mutual trust and respect can be maintained.

3. Defective liaison between C.P.S. and C.M.A. We believe that C.P.S. has not been accorded its rightful position within the family of medicine; it has been a stepchild of organized medicine, which approaches state and county medical societies with hat in trembling hand, poised for instant retreat. It has been forced to conduct its own disciplinary actions, but is afraid to do so. Functioning, effective local committees of doctors in C.P.S.'s behalf are rare. Singleness of purpose and consistency of policy and action between C.P.S. on the one hand and state and county medical associations on the other must be accomplished.

4. Imperfect communication. C.P.S. is an efficient organization, as efficient as the smoothly running machines which write its checks. And it has tended too much to become just like those machines in the coldness and impersonality of its contacts with physicians and patients. For example, one out of four claims submitted by the doctor is returned with printed reasons for rejection neatly checked. The doctor had taken time to prepare, sign and file the claim; C.P.S. communicates its rejection with a printed form which lacks human courtesy and consideration.

5. Ambulatory medical care. Insurance is at its best when it distributes, at a low cost ratio, shock losses which individual participants would find it difficult, if not impossible, to meet. Conversely, insurance is at its worst when it assists in budgeting, at a high cost ratio, small losses which individual participants would not find it difficult to meet. By these standards, home and office coverage obviously is bad insurance. It is costly, it invites abuse, it is expensive to administer, and it multiplies the number of opportunities for petty friction between C.P.S., patients and doctors. C.P.S., with its twelve years' experience, has served one of its purposes well in demonstrating this for all to see.

6. Blue Cross-Blue Shield relations. Medical services and hospital services are complementary to each other, and can most economically be sold and administered together. The schism in California between Blue Cross and C.P.S., by violating this principle, has resulted in increased costs and in unprofitable competition between two organizations that, in the public mind, are identified with medicine. It seems to your committee that from a public relations standpoint, there may develop on the part of the uninformed public a "plague on both your houses" feeling that may have important political implications.

TREATMENT

As has been already said, your committee is reasonably certain of the accuracy and completness of its diagnosis. So far as treatment is concerned, our recommendations must be classified under three general headings:

1. Those principles of organization and methods of operation of C.P.S. which must be maintained and continued with no, or at most minor, change.

2. Those which your committee is ready to recommend be modified, or subjected to major revision.

3. Those which your committee is presently still studying, and upon which we are not yet ready to recommend.

First, what in C.P.S. is good or necessary, and must be preserved? At the top of this list must come its very existence. We are fully convinced that, for the good of medicine and the people of our state, C.P.S. must continue to exist because:

1. A prepayment method of the costs of serious illness is a modern social necessity.

2. Either we lead in the development of sound health insurance, or we give way to those who will—and that means they will lead us.

3. He who controls the payment of medical care costs controls medicine—whether that be the state, the commercial insurance companies, the hospitals, industry, labor or doctors themselves.

From these premises can be drawn a realistic statement of what should be the objectives of California Physicians' Service. Your committee is profoundly convinced that the interests of medicine and of the public we serve demand that C.P.S. fulfill the following purposes:

1. To provide a method of insuring against the costs of catastrophically expensive illness for those whose need for it is real—remembering that the measure of a catastrophically expensive illness is a relative scale whose length varies with the economic status of the patient.

2. To keep the medical care of our patients free from political or commercial domination.

3. To continue to provide a "laboratory" under medical control for further exploration in the still fluid field of prepayment medicine.

4. To represent the profession in negotiations with organized groups, governmental or private.

From these objectives, in turn, our further recommendations may be drawn.

Service-type coverage must continue to be the foundation of C.P.S. operations. We have given earnest consideration to proposals that C.P.S. be converted entirely to an indemnity plan. But we hold the conviction, based both on disinterested advice from sources we consider competent and on our own considered judgment, that it would be a mistake to abandon the service principle. It is the service type of plan which is needed by at least the low-income group and even, in the case of serious illness, by those of so-called moderate income. Our findings emphasize that C.P.S., with its service character, fulfills a real need and therefore has been effective in presenting medicine's reasons for opposing the socialization of medicine.

Another condition with which we must learn to live—the interposition of a third party between the doctor and his patient. Additional paper work, the need for certain irksome restrictions to control overuse, all hamper the doctor's complete freedom but it must be perfectly obvious that they are inevitable. At the same time, these restrictions can be minimized by contract provisions which do not invite abuse, the paper work can be reduced to the irreducible minimum, and the tone and courtesy of contact between C.P.S., doctor and patient can be immeasurably improved. Both doctor and patient can be made to feel that C.P.S. is personally interested in them, so that the third party becomes more of a colleague and collaborator than a meddler and policeman. Experts inform us that this can be achieved—how is a matter for consultation, which we recommend.

A fee schedule is a basic part of a service-type contract. It is also, of course, the factor intruding to the greatest degree on the freedom of the physician. But, since it is basic to the plan of operation under which we are agreed C.P.S. should continue to function, it becomes a factor that we must persuade ourselves to accept with good grace.

That an income ceiling is a necessity for a service plan your committee believes can be accepted without debate. The level at which that ceiling should be set is a factor upon which we are not ready to recommend. It should be pointed out that the practical applicability of an income ceiling becomes greatest at both ends of the scale: In other words, if it be so low as to cover only the semi-indigent, or so high as to cover almost everyone. An income ceiling that splits the average income group in the middle can lead only to friction, misunderstanding, abuse and resentment.

Under our second heading, those principles of organization and methods of operation of C.P.S. which your committee is ready to recommend be modified, we submit some specific suggestions for change, and some generalizations whose implementation seems to us to be possible of accomplishment.

1. Multiplicity of contracts. We recommend that the contract structure be simplified as rapidly as possible, and that demands for minor modifications of contracts to meet desires of groups be resisted.

2. Method of payment. We recommend that, with technical assistance, C.P.S. devise some method of making known to each patient the value and the extent of the services rendered him by his doctor for which C.P.S. is paying the doctor on his account.

3. Defective liaison between C.P.S. and C.M.A. We recommend that the by-laws of California Physicians' Service be amended so that the voting members of the Executive Committee of the California Medical Association will ex officio be members of the Board of Trustees of California Physicians' Service. We further recommend that each county medical society maintain a committee to function as an internal self-disciplining agency available to C.P.S., the members of the county society, and to the public generally for mediation and, if necessary, action in instances of abuse. This committee should also serve to provide liaison between C.P.S. and the county medical society.

4. Imperfect communication. We recommend reviewing all the procedures of contact with doctors—perhaps with the help of some special expert in this field—in order to make these contacts more understanding and more friendly.

5. Blue Cross-Blue Shield relations. We recommend that the Council of the California Medical Association undertake to negotiate with the boards of directors of the Blue Cross plans and the California Hospital Association in an effort to achieve the cooperation between Blue Shield and Blue Cross that is necessary to the best interests of the patient.

Our third group of problems are those for which your committee is not yet prepared to recommend.

They are those knotty problems whose elucidation requires deep study, and whose answers may have far-reaching effects on both C.P.S. and medicine. We should like to have answers for them today, but there has just not been enough time for your committee to be able yet to say to itself, let alone to you, that we have found the best solution. We reemphasize our opening statement that this is a progress report.

First of these is the level of the income ceiling. That level will depend upon the income group for whom service-type coverage is believed necessary, but, more fundamentally, upon the very objectives of C.P.S. The practicability of a dual income ceiling is under consideration, as are the problems that devolve from the fact that the service contract becomes an indemnity contract for above-ceiling beneficiaries. A good service plan can become a poor indemnity plan, and your committee is exploring the difficulties of making a single contract serve both purposes. We ask for more time to think.

Next, the level of the fee schedule. The difficulties of constructing a fee schedule fairly applicable to all areas of our state and to every type of medical practice are too obvious to require belaboring. Further, the general level of the fee schedule will be, to some extent, a function of the income ceiling and of the economic status of the beneficiaries to whom it is intended to apply. The measure of the success of any schedule will be its acceptability as compromise with theoretical perfection; we feel that a reasonable compromise can be achieved, and it is toward that goal your committee is working.

We have indicated in our diagnosis that home and office coverage is bad insurance. But the obvious solution, to abandon it, has been opposed by our advisers as being unwise. Some method of gradual limitation, preferably by conversion to an actuarially sound and beneficiarily acceptable substitute, must be devised. Your committee has considered as possible solutions the application of the cash deduction principle, the conversion of this type of coverage to an indemnity basis, or the application of co-insurance. To borrow a phrase from the military, the situation is still fluid.

A subhead under home and office care in that it represents the same type of problem is the degree to which diagnostic services (laboratory and x-ray costs) can be covered by insurance. The experience of all insurers with these costs has been bad. How these costs can be handled to eliminate overuse and abuse and at the same time give some measure of protection against the occasionally heavy cost of these services to a patient is being approached by considering the same devices as those that may be applicable to home and office coverage. We are not yet prepared to recommend.

There are other problems upon which further study is necessary. We list them so that you will know they are being considered.

1. The desirability and possibility of eliminating the 90-day chronic illness clause.

2. The pros and cons of limiting C.P.S. payments to C.P.S. physician members.

3. Some method of making physician membership a privilege and a valued asset rather than a duty reluctantly performed.

4. The possibility of improving C.P.S. operations by major or minor modifications of C.P.S. office practice and procedures.

5. The devising of a method for informing and convincing the general public that their real needs which prepayment insurance can reasonably be expected to fill are not the same as their wants, which health insurance cannot economically meet, is under study.

The study of some of these problems is well along, and of others barely begun. Their solutions are of such fundamental importance that they cannot be formulated to meet a deadline. We urge most strongly that this study be continued until these answers are found, whether the time required be another week or another year. Only thus will solidly dependable results have a chance for achievement, and only results of that kind can be acceptable.

Hindsight brings us the most accurate of all knowledge. When C.P.S. was founded, its Board of Trustees was of course unequipped with hindsight in the form of actuarial information, experience in framing prepaid medical care plans, in the reactions of doctors and patients to the new field of prepaid medicine; they were unequipped with knowledge of the actual wants and needs of people which voluntary health insurance could reasonably fulfill.

This committee has had the inestimable advantage of thirteen years of this hindsight; of pioneering experience achieved by Boards of Trustees groping for solutions to complex, sometimes insoluble problems; of pioneering experience achieved by men who had the courage to be wrong.

It also had the advantage of working apart from the atmosphere of interference, complaint, and heckling which has plagued nearly every hour of the life of every member of the Board of Trustees since the beginning of C.P.S.

The light this hindsight sheds on C.P.S. should not blind the doctors of California to the very real day-to-day achievements of the Board of Trustees. We have made a critical analysis. We have outlined not their accomplishments, but our mutual failings. The fact that it is we, and not a state bureau, who today are deciding the direction in which health insurance will go in California, is a measure of the foresight, courage, and work of our Boards of Trustees, the administration and loyal employees of C.P.S.

This is a great debt we owe them. (Applause.)

Speaker Charnock: Dr. Bailey, have you any further comments to make?

This will be referred to Reference Committee No. 1 so you all may discuss it. At some time during today's session it will be necessary to recess this House to become the Administrative Members of the

California Physicians' Service. This seems to be an excellent time. With the permission of the House we will recess, to become the Administrative Members of the California Physicians' Service. I call your attention to the fact that the first General Meeting of the California Medical Association will be held in the Biltmore Theatre at 3:00 o'clock. The Biltmore Theatre is just around the corner on Fifth Street. We will recess the House of Delegates until 7:30 this evening and, with your permission, I will now turn this meeting over to Dr. Cass.

. . . The House of Delegates recessed at 2:30 p.m., to reconvene at 7:30 p.m. . . .

* * *

SUNDAY EVENING SESSION APRIL 27, 1952

The House of Delegates of the California Medical Association was called to order at 7:50 p.m. by the Speaker of the House, Dr. Charnock.

Speaker Charnock: I will declare the House in session from its recess.

We neglected to ask the Treasurer if he had any further report. For technical reasons we will now ask the Treasurer if he has any further report to make.

Dr. Daniels: No further report.

Speaker Charnock: We will now take up further the report of Reference Committee No. 3 that was interrupted. Dr. Craig!

REPORT OF REFERENCE COMMITTEE No. 3 (Continued)

Dr. Lyle G. Craig (chairman): Mr. Speaker and members of the House of Delegates: At the time our consideration of this report was interrupted we were considering resolution number 5. Dr. Davis from Santa Clara County had presented an amendment to the resolution which was referred to our committee. We met with Dr. Davis and other parties and have brought up a substitute resolution which I should like to read to the House. Is Dr. Davis in the House?

Dr. Davis: Present.

Speaker Charnock: Did you get your amendment in time so it can be read?

Dr. Davis: I was unable to do so but in view of the conclusions the committee reached, I presume that I will withdraw the amendment to the resolution that I offered.

Dr. Craig: I should like to say that the resolution substituted for resolution number 5 originally introduced by Dr. Gibbons of San Francisco County and the amended resolution presented by Dr. Davis of Santa Clara County, who introduced the amendment in question, reads:

"Whereas, Free choice of physician maintains a normal state of individual and private enterprise for both patient and physician; and

"Whereas, Competition on the basis of individual physicians involved in any free choice system offers the greatest stimulus for proficiency; and

"Whereas, The medical profession has accepted and is sponsoring the right of people to use voluntary insurance or other voluntary collective methods to defray the cost of medical care; therefore, be it

"*Resolved*, That the Council of the California Medical Association be instructed by the House of Delegates to appoint a special committee to institute a study of voluntary health policies and plans with the view to establishing minimum standards and improving such coverage for the benefit of the profession and the public."

This is the end of the substitute resolution.

Mr. Speaker, we wish to recommend that the resolution as substituted do pass. I therefore move the adoption of this section of the report.

. . . The motion was variously seconded. . . .

Speaker Charnock: Is there any discussion?

Dr. Ralph Teall (Sacramento County): This is something that has been very close to my heart for many years. I have had occasion to address this body before on the idea that we as doctors and the California Medical Association are not primarily interested in being in the insurance business. We are primarily interested in seeing to it that there is a very high standard of insurance available on a voluntary basis for the people of California. The function of the California Medical Association, as many of us see it, is to insure that that kind of medical insurance is available and that it be the very best kind and that the standards be always held high.

We have heard excellent reports from the finance committee and then we have heard reports about our difficulties with C.P.S. but we are still tending to be blinded by the idea that the doctor should provide good insurance or it is not available at all. I should like to take this opportunity to urge that we take this very important step in setting up a committee which can have the prime responsibility of investigating all kinds of voluntary health insurance with a view to the fact that the California Medical Association may ultimately allow its seal of approval on contracts which seem to serve best the interest of the patient and the physician. It is only by the development of a great system of voluntary insurance, not by one type, that we can ultimately hope to defeat the continuing threat of governmental compulsory insurance. (Applause.)

Speaker Charnock: Thank you, Dr. Teall.

Is there any more discussion on this subject of the resolution? Are you ready for the question?

. . . The question was called for. . . .

Speaker Charnock: All those in favor of accepting this portion of the report will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote and it was carried. . . .

Speaker Charnock: It is passed unanimously.

Dr. Craig: The next resolution is number 6, introduced by Dr. Gibbons of San Francisco County. I suppose you have the copy and the comments in the written report. We have no change to make in our recommendation and I think it is clear to all of you that we objected to a too enthusiastic enforcement of indemnity insurance in view of the fact that we are still sponsoring the California Physicians' Service with the service type of insurance and, even more important, we objected to placing the responsibility for arbitration of disputes between the insurer and the beneficiary in the hands of the medical profession. It is unfortunate that in making out the report I wrote on page 8 the following sentence in the original resolution which was deleted and then left you hanging. It should have a sentence which was filled in in the original resolution but which has been deleted. That is number 5 in the original resolution which is concerning the arbitration of disputes.

The committee recommends that this resolution as amended do pass. Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion?

Dr. Thomas F. Dozier (Alameda-Contra Costa County): I proposed the amendment to the resolution as recommended by the reference committee. The purpose of this resolution is twofold: first, to endorse sound voluntary, indemnity type, prepaid medical and surgical expense insurance and, second, to help prevent the abuses of this type of insurance. The reference committee recommended passage of this resolution with two changes, the second of which is to strike out the final sentence, number 4, and which would eliminate any statement of the active assistance that this Association proposes to take in its prevention and remedy of such abuses. The reference committee's objections to sentence 4 in the original resolution are entirely valid. I propose, however, an amendment to this sentence which would meet these valid objections and would advance the purposes of the original resolution. It would proclaim the appropriate and legitimate cooperation of the organized medical profession. This is the amendment I propose which would be substituted for the original number 4:

"4. To advise them that any grievances regarding possible abuses in these indemnifying policies involving unethical or unprofessional conduct by members of the California Medical Association should be referred to the local medical society professional conduct committees for advice and appropriate action."

Speaker Charnock: Is there a second to this amendment?

. . . The amendment was seconded. . . .

Speaker Charnock: Dr. Craig, do you wish to speak to this amendment at all?

Dr. Craig: I would like to have it read again.

. . . The amendment was reread. . . .

Dr. Craig: Well, I can see no objection to that if you want the local medical profession or society to investigate grievances involving unethical or questionable conduct. Dr. Halley, you are on this committee and do you have any objection to that?

Dr. E. C. Halley: No objection.

Dr. Craig: I should think that the committee, having recommended the resolution do pass, does not object to that clause in it because I think that is a legitimate function of the professional conduct committee of the local medical society. Our idea was that we didn't want the professional conduct committees to clutter up their committee with complaints that people have regarding the insurance companies not paying them enough. This is a problem between the patient and the insurance company and you are only going to adjudicate problems involving unprofessional or unethical conduct. I think that is the proper function of the professional conduct committee and I think we would favor that.

. . . The question was called for. . . .

Speaker Charnock: You are voting upon the amendment to this section of the report and those in favor of the amendment will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote and it was carried unanimously. . . .

Speaker Charnock: It is carried. We will now vote upon the section as amended. Those who are in favor of this section of the report as amended will signify by saying "aye" and those opposed "no."

. . . A vote on that section of the report as amended was taken and it was passed. . . .

Speaker Charnock: It is passed. Dr. Craig.

Dr. Craig: Resolution number 7 was introduced by Dr. Campbell of San Francisco County and had to do with the creation of a standing committee to study the cost of the program and the problem of the aging. Dr. Campbell realized, after it was introduced, that the By-Laws wouldn't permit the formation of such a standing committee and he decided to change it to a special committee. Inasmuch as this is the action which the reference committee has taken, we feel that his feeling and ours were in agreement on that and we recommend that the resolution do pass. Mr. Chairman, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

Speaker Charnock: Is there any discussion?

It has been moved and seconded that this section of the report be passed and those in favor will say "aye" and those to the contrary "no."

. . . The motion was put to a vote and it was carried. . . .

Speaker Charnock: It is passed.

Dr. Craig: Resolution number 8 was introduced by Dr. Magoon of Santa Clara County. It is before you in your printed copy. The committee discussed this at some length and we realized that there was a problem that does need consideration but we felt that there were several objections to the resolution and we expressed them in our report which you have and can read. Therefore, there is no reason for enlarging on them further. The committee recommends this resolution do not pass. Mr. Speaker, I move the adoption of this section of the report.

Speaker Charnock: Is there a second?

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion?

Dr. Sydney Thomas (Santa Clara County): I think if any of you give due consideration to the "whereases" that you will reconsider this whole resolution. Perhaps some of the words, as the committee states, are intemperate; nevertheless they do carry a message and we should all listen and, if I may just take your time to read the first sentence or the first "whereas":

"Whereas, Hospitals are showing increasing eagerness and determination to appear to the public as dispensers of medical as well as hospital care;" and that alone was the aim of this resolution. Perhaps the wording could be changed or modified but, as it stands, it still would point in the right direction. I think that the committee's recommendation "do not pass" is wrong.

Speaker Charnock: Is there any further discussion? The Chair, hearing none, will call the question. You realize that in voting on this in the affirmative, that vote will kill this resolution. That is the recommendation of the reference committee. Those in favor of this section of the report of the reference committee will signify by saying "aye" and to the contrary "no."

. . . A vote was taken on the motion. . . .

Speaker Charnock: It is passed.

. . . A standing vote was called for. . . .

Speaker Charnock: A standing vote has been called for. Those in favor of this section of the report will please stand.

. . . A standing vote. . . .

Speaker Charnock: Thank you, gentlemen, and now those opposed will please stand.

. . . Those opposed stood. . . .

Speaker Charnock: The motion is carried. The resolution is lost.

Dr. Craig: Resolution number 9, introduced by Dr. Carson of San Francisco County, has to do with the restrictions by the Blue Cross on diagnostic service in the treatment of acute illnesses while hospitalized.

We approved the general principle of the resolution and you will note, as we have capitalized in our amendment, that we would not only suggest the Blue Cross clarify their policy but that when diagnostic procedures are essential in the treatment of disease they provide adequate coverage for all such diagnostic procedures as stated therein. With this recommendation, the committee recommends that the resolution do pass. Mr. Speaker, I move the adoption of this section of the report.

Speaker Charnock: Is there a second?

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report be passed. It there any discussion?

Dr. Blong.

Dr. Peter J. Blong (Los Angeles County): This afternoon Dr. Bailey likened the Blue Cross, of which I am on the Board of Directors, to a clan that is in Scotch costume, so I will say that as far as I am concerned, I would be very glad to hand in my kilt and tartan and take you across the channel to Ireland and perhaps take a little more mellow or more humorous view of the situation. However, I would first call your attention to the opening phrase of the recommendation of reference committee No. 3, "We feel that it is wrong for the insurer to pretend to furnish payment for treatment of sick patients in the hospital and deny coverage for essential steps in that treatment on the specious claim that the procedure is only diagnostic." The word "pretend" is too all-inclusive and gives rise to trouble there. We didn't like that very much. Now, we thought the wording there was rather stout and strong. Perhaps that is all right. Anyhow, we thought that it would stand a little early clarification.

We put our seal on the Blue Cross indemnity contracts. These contracts state that the hospital admission will be accepted only for illness and injury, whereas in illness of such severity that medical care is required, all facilities including diagnostic facilities are provided according to the terms of the contract. Patients who are accepted under an insurance contract would ordinarily be handled as outpatients and quite generally at the doctor's office or the laboratory. Our regular hospital contract contains an exclusion against that type of an insurer for two reasons; first, that it is not an acute illness and, secondly, that inclusion would invariably increase our rate and divert to hospitals many patients who should properly be handled in doctors' offices. I think that is a very important point. I need not tell you about diagnostic procedures in hospitals which are overdone. I don't think this evening we should do that but I can tell you about General Hawley's article which you have all read at different times.

Accident cases requiring hospitalization are likewise diagnostic care. They are given twenty-four hours as out-patient coverage where it is determined whether they will be sick and put in bed in a hospital. Now we come to the part of the denials because that is the very hard nut to crack in all of this business, both for us and our brother workers. Denials up to that time, up to the time of our separation in August of 1951, and we are speaking of C.P.S. there, as there may be some considerable confusion in the mind of the medical profession believing that all denials have been Blue Cross policies, but it seems to be one of the popular things for the public to name us all Blue Cross and you don't use C.P.S. as you do Blue Cross but we take the glory, while in fact we believe the vast majority of these denials were under the C.P.S. I am not going to burden you with statistics but I am going to give you two. In one month's experience the Blue Cross, out of 9,000 cases, had 51 denials. In six months' experience with Blue Cross there were 327 denials out of 57,000 cases. Gentlemen, I didn't put that in percentage because percentages sometimes are misleading, but you can see the percentage is very small.

Now to widen out our prospective field, eighteen months ago we did try to sell the whole package in a formal full coverage. It hasn't gone too well. Eighteen months ago it was optional to provide for ambulatory care at the doctor's office with certain limitations. This caused much of the difficulty and confusion now existing but at the same time Blue Cross found this same thing difficult to sell. It is a peculiar thing. Perhaps they are bucking a better competition than C.P.S. I hope so but it wasn't much of a surcharge. It was only about $1.50 a family, $1.25 for females and $1.80 for males and it didn't go well at all.

When they had this thing after the, we say the "split," the separation, we had to make out our own form of contract and we adapted our contract from the one in Oakland. They had a very good insurance experience for about seven or eight years so ours wasn't entirely a new thing. We hope that by making mistakes we may be able to amend those mistakes; however, I think a little clarification of their very strong language is in order.

Speaker Charnock: Dr. Gibbons.

Dr. Gibbons: It is my belief that the resolution was originally made out of certain nondiscerning diagnostic examinations of patients who really needed care when they entered the hospital as medical cases. There I am in sympathy with the resolution as it was originally introduced. I do, however, believe that the additional amendment is worded a little strongly because there are many diagnostic procedures which are excessively expensive and should these be included as part of the coverage for Blue Cross? It may result in some danger. I therefore would like to amend this recommendation to omit the paragraph that was added and refer to the original resolution.

Speaker Charnock: Is there a second to that?

. . . The amendment was seconded. . . .

Speaker Charnock: Is there any further discussion? Dr. Bailey!

Dr. Bailey: Well, as I attempted to point out in my report on C.P.S. and the Blue Cross, we went to the other states and, as I told you this afternoon, we reluctantly realized we were going to have to come to this group with facts.

In Illinois they recently eliminated x-rays entirely as far as Blue Cross was concerned. They took that out to the extent of $15.00. In Kansas, unless you are in the hospital for four days, there are no x-rays or laboratory benefits. These are things that the doctors have taken care of by themselves for years and it isn't going to help to ask for it as the doctors will do it anyway.

In California, of course, I think we can set what the rule is. We told you this afternoon that it cost 34 per cent more, or that much of an increase in Blue Shield costs, since August of 1950. C.P.S. has gone up accordingly. The question is, do you want insurance or do you just want to cover everybody for everything they might feel is necessary? It is rather trying even to have a situation arise where a patient, if he once gets in the hospital, and the hospitals are already overcrowded, can get unlimited amounts of x-rays or laboratory work at an unlimited rate. That is what is happening in California now. I hope for that reason this doesn't pass.

Speaker Charnock: Let us first work on this amendment by Dr. Gibbons. Is there any discussion on that? Are you ready for a vote on that? Those who are in favor of adding the amendment presented by Dr. Gibbons will signify by saying "aye" and to the contrary "no."

. . . A vote on the amendment was taken and it was carried. . . .

Speaker Charnock: The "ayes" have it—the Chair is in doubt. Those in favor of Dr. Gibbons' amendment, adding this to the report, will please stand.

. . . Those in favor stood. . . .

Speaker Charnock: Now, those who are opposed to the amendment will please stand.

. . . Those opposed stood. . . .

Speaker Charnock: The amendment has won. Have you anything to add to that, Dr. Craig?

Dr. Craig: I don't think the committee has anything to add. I want to apologize to Dr. Blong and to the Blue Cross for the unfortunate use of the word "pretend." I didn't intend anything offensive by that. If you could suggest any other word I would be willing to replace it.

The resolution as it now stands, deleting the suggestion that we provide coverage for those diagnostic procedures essential to the treatment of the sick, and I would like to point out that this resolution has nothing to do with admitting patients into the hospital for diagnostic study or doing it at home, but for those people who are admitted as sick where these procedures might be necessary in their treatment; however, that is neither here nor there. What we have done by the amendment is merely recall for consideration the original resolution and you will now vote on the original resolution and with that understanding, the committee will still recommend that it do pass.

Speaker Charnock: Is there any further discussion on the resolution as amended? Are you ready for the question?

. . . The question was called for. . . .

Speaker Charnock: Those who are in favor of the resolution as amended will signify by saying "aye" and to the contrary "no."

. . . A vote was taken on the motion. . . .

Speaker Charnock: The Chair is again in doubt. Those who are in favor of the resolution as amended will please stand.

. . . A standing vote was then taken. . . .

SPEAKER CHARNOCK: Those who are opposed to this resolution as amended, and that is the original resolution, will please stand.

. . . A standing vote was then taken. . . .

SPEAKER CHARNOCK: The resolution passes. Dr. Craig.

DR. CRAIG: The final resolution is Number 10 and that was one that was introduced as an emergency by Dr. Gibbons regarding publication of arguments for and against the resolutions introduced at the December session.

It was the feeling of the committee that we might consider making this a policy of the organization but Dr. Gibbons, who introduced the resolution, wrote me, as I have recorded here, and therefore we feel that there are certain practical difficulties and it is possibly not the right place to publish our various arguments in the journal. Probably our experience with our difficulties with California Physicians' Service in recent weeks has emphasized the fact that some things shouldn't be too widely disseminated in the public press. On that account we feel, that particularly in view of the fact that the author did not want it changed to become a permanent policy of the organization, we recommended that it do not pass.

SPEAKER CHARNOCK: Is there a second?

. . . The recommendation was seconded. . . .

SPEAKER CHARNOCK: Is there any discussion? You realize that an affirmative vote will defeat this resolution. Are you ready for the question? Those who are in favor of this section of the report will signify by saying "aye" and those opposed "no."

. . . The motion was put to a vote. . . .

SPEAKER CHARNOCK: The report is adopted and the resolution is not passed.

DR. CRAIG: The amendments to the By-Laws suggested in the committee's report will be introduced at the proper time as resolutions. I should like to say, however, that after consultation with Mr. Hassard, legal counsel, we have decided not to introduce the second resolution and we have made some changes in the first. If the major resolution which we are submitting in substitution for Dr. Loos' amendment is passed by this house, it requires a two-thirds majority and it will solve some of these technical sleeper problems but, if not passed, we will have to have some of these resolutions introduced at this time in order that they might be voted upon on Tuesday.

The one regarding Chapter V, Section 7, will not be introduced at all because we are going to introduce an amendment to the by-laws to correct that difficulty and the second resolution, the one concerning the designating of steps for proper introduction of resolutions and the designation of emergency resolutions, those two paragraphs I will read when it is introduced a little later.

I think that completes the report of the committee and I should like again to thank Dr. Halley of Fresno and Dr. Zumwalt of San Francisco for their cooperation and assistance in the consideration and formation of this report, also the indulgence of the House for your kindly reception of the committee's report. (Applause.)

Mr. Speaker, I move the adoption of the report as a whole, as amended.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this report, as amended, as a whole. Is there any discussion?

. . . There being no discussion, the motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: Mr. Secretary, is there any more old business?

There is no more old business and we will pass on to new business.

There is just one announcement that I would like to make before we go on to new business. There has been considerable confusion about the hour we would accept emergency resolutions. At your last meeting the Chair ruled it is our opinion that at the time they are received, if they are declared by the delegates as an emergency resolution, they will be declared as such. They will then be received and sent to the reference committee for processing and brought before the House at the Tuesday meeting. It will then require a two-thirds vote if it is designated as an emergency resolution.

I should like to remind reference committee No. 3 to be prepared to report on all resolutions presented this evening because legislation which comes up might very well make it necessary for them to report. I would also remind all the delegates who are interested in these resolutions to present their thoughts to the reference committee so that the reference committee may be in a position to report if the amendments which are to be presented tonight are approved.

. . . Vice-Speaker Randel assumed the Chair. . . .

VICE-SPEAKER RANDEL: In the proceeding in the consideration of new business which now comes before the House, members are invited to introduce any and all resolutions and amendments to the constitution and the by-laws. The Chair recognizes Dr. Sidney Shipman.

DR. SIDNEY SHIPMAN: Mr. Speaker, and members of the House: These resolutions are introduced in behalf of the Council. The first one is an emergency resolution:

WHEREAS, It is in the public interest that the best medical care be generally available, and

WHEREAS, This objective would be furthered by eventual amalgamation of the medical and osteopathic professions in which future graduates and practitioners would have equal training of the highest scientific caliber; therefore, be it

Resolved, That the House of Delegates of the California Medical Association approve further attempts to accomplish such an eventual amalgamation under circumstances which would be acceptable to the Judicial Council and Board of Trustees of the American Medical Association and that these bodies be requested to recommend specific procedures for the accomplishment of these objectives. (Applause.)

The second has to do with retired members who retire and then change their minds:

Be It Resolved, That section 4, paragraph (a) of Chapter 11 of the by-laws be amended to read as follows:

"Section 4—Qualifications and Election of Other Classes of Membership.

"(a) Retired Members. The Council, on recommendation of any component society, may grant retired membership to those active members who have ceased the practice of medicine to the extent and for reasons satisfactory to such component society and the Council, who have been active members of the Association for a total of ten years prior thereto, and who have paid dues for the current or immediately preceding year. Retired membership shall endure as long as the retired member does not engage in full time practice of medicine; but in the event that a member classified as retired resumes active, full time practice of medicine such resumption shall automatically terminate retired membership and reestablish active membership. Upon resumption of full time practice by any retired member, the secretary of his component society shall transfer such member from the retired classification to the active classification, and notify the Secretary of this Association, who shall do likewise with respect to the membership rolls of this Association."

Vice-Speaker Randel: The Chair declares the first resolution of Dr. Shipman to be an emergency resolution. It will be referred to reference committee No. 3.

The second resolution will be referred to reference committee No. 4, and, please understand, there is no debate or discussion on these at this time. Dr. Craig.

Dr. Craig: I should like to present this resolution for reference committee No. 3 and I would like to say that this is my swan song and this is the last time I shall appear here as chairman of the committee so you won't have to listen to me any more. This is a proposed amendment to the by-laws of the California Medical Association. This is the substitute which was printed in your report of the committee and I have only changed one word but I am told there is no provision for the resolution to be introduced by title only so it has to be read:

Resolved, That Chapter 5, Section 7, of the by-laws of the California Medical Association be amended to read as follows:

"Section 7.—Sessions and Meetings.

"(a) In each year there shall be one regular session of the House of Delegates, the time and place of such session to be fixed by the Council as far as possible in advance, and notice thereof published in the Journal of the Association. This session shall ordinarily be held within the first six months of the calendar year, and shall be designated the Annual Session.

"(b) In addition to the Annual Session, special sessions of the House of Delegates may be called by a two-thirds vote of all the members of the Council at any regular or special meeting of the Council; or may be called by a written request signed by one-half or more of the members of the House of Delegates, stating the object of the session, and filed with the Secretary in the office of the Association. Upon receipt of such a call by the Secretary, the Council shall within thirty (30) days thereafter fix the time and place for such session, and shall cause written notice thereof, stating the purpose of the session, to be sent by United States mail to each member of the House of Delegates at his office or place of residence, as shown by the records in the Secretary's office, at least fifteen (15) days prior to the date of the meeting. At any such special session the House may consider and act upon all matters stated in the call, and may in addition recall from committee for action by the House any resolutions, by-law amendments, or other matters not excluded by the Constitution, which have been referred to a reference committee or special committee at a prior session. In this event, the House may waive the requirement of these by-laws that such committees shall have submitted a written report thirty (30) days in advance of the session.

"(c) Resolutions, or other new business, shall be introduced at the first meeting of any session, and shall be referred by the Speaker to the proper reference committee, which committee shall make a written report with recommendations to the House of Delegates at a subsequent meeting of the same session, held after an interval of not less than twenty-four (24) hours. Such committee report may be acted upon by the House either as a whole or by sections, and each section may either be given final action, returned to the reference committee for further study until the next regular or special session, or may be referred to a special committee, appointed by the Speaker, for such further consideration.

"(d) At every meeting of any session of the House of Delegates the Speaker shall designate a time at which any member may request the permission of the House to introduce an emergency resolution for immediate consideration. Such permission shall require a two-thirds affirmative vote of the members of the House present and voting. Such permission having been granted, the resolution must be acted upon during that session of the House, and the Speaker may if necessary, and at his discretion, waive the rule of referring the resolution to a committee. The passage of such emergency resolution shall require a two-thirds affirmative vote of all members present and voting, and the action shall be final."

If the amendment to this resolution is defeated it doesn't become a routine resolution because, if we were to put it in as an emergency and it got voted down, it would then be in the hopper for the next time.

We realize that this amendment which I have just read may not pass and, if it doesn't, we would like to have in the same section the paragraphs (c) and (d) which provide for the proper time for introduction of resolutions passed and since (c) and (d) of this resolution read exactly the same as the one I previously read, it will not be necessary to read them again, will it?

Vice-Speaker Randel: No.

Dr. Craig: I think we can get along without reading them.

In order to correct a sleeper concerning the time for production of the budget and for fixing the annual dues, we have proposed the following two amendments to the constitution:

Resolved, That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 1, the first sentence be amended by deleting the word "regular" and inserting in its stead the word "Annual," so that this first sentence shall read:

"At each Annual Session the House of Delegates shall by a majority vote, fix the annual dues to be paid by members of the Association for the ensuing year."

The remainder of Section 1 shall be unchanged.

The object of this amendment is to provide that even though the Association shall continue to have regular sessions, the fixing of annual dues shall be done only once a year which, obviously, is the way we want it.

The final resolution is another amendment to the constitution providing:

Resolved, That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 5, the first sentence be amended by striking out the word "regular" and inserting in its stead the word "Annual," so that the first sentence shall read:

"At each Annual Session of the House of Delegates the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year."

The remainder of the Section 5 shall be unchanged.

That is for the same purpose regarding the budget.

Vice-Speaker Randel: These proposed amendments to the by-laws and constitution will be referred to reference committee No. 4.

Dr. Joseph W. Telford (San Diego County): I assume that this would be considered an emergency but the rules still confuse me.

By way of introduction, I would say that it has come to the attention of the San Diego delegation that there are many students in our local county hospitals, between 5,000 and 6,000 who graduated from medical schools this year in the United States and that there are between 11,000 and 12,000 approved internships:

Whereas, The number of internships and residencies now far exceeds the number of physicians available for these positions; and

Whereas, This situation is now creating a problem of adequate medical coverage in many hospitals; and

Whereas, The employment of physicians to cover services where interns and/or residents are not available is creating a policy which jeopardizes the training program; and

Whereas, Such an imbalance may very well lead to further governmental intervention in our physician training programs; and

Whereas, The number of residencies and internships available seems to be increased by the continuing demands of hospitals for larger staffs and the creation of additional vacancies by some hospitals that do not offer the fullest training; now, therefore, be it

Resolved, That this House of Delegates instruct the delegates to the A.M.A. to present a resolution for immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the gross imbalance between the large number of established residencies and internships and the small number of physicians available to fill them, and that this discrepancy be corrected as soon as possible.

Vice-Speaker Randel: Unless there is any objection, the Chair declares this an emergency resolution and it will be referred to reference committee No. 3.

Dr. Carl M. Hadley (San Bernardino County):

Whereas, The use of blood has reached a great importance in the practice of medicine and in the care of the sick; and

Whereas, Blood is being extensively used in the prevention of death, both in domestic life and in battle areas; and

Whereas, The collection and dispensing of this blood is a medical problem in all its aspects, and

Whereas, The collection and dispensing of this blood is being performed by the affiliated blood banks of the California Blood Bank Association; and

Whereas, The provision of blood for individuals with no financial or replacement obligation tends to undermine the self reliance and independence of the public; and

Whereas, Certain civilian blood procurement programs purport to provide blood for civilian individuals without such responsibility; and

Whereas, The magnitude of this program is such as to overtax the financial resources of any voluntarily supported agency, and will inevitably lead to the transfer of such a program to the government as another socialistic and paternalistic enterprise; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association go on record in recommending that the entire collection and dispensing of blood in California shall be under the direction and control of the California Blood Bank Commission. (Applause.)

Vice-Speaker Randel: That resolution will be referred to reference committee No. 3.

Dr. Gibbons.

Dr. Henry Gibbons III (San Francisco County): These resolutions are presented on behalf of the San Francisco delegation and there is also an amendment to Chapter V, Section 3 of the by-laws of the California Medical Association:

Be it Resolved, That Chapter V, entitled House of Delegates, Section 3, entitled Limitations on Seating of Delegates, be, and the same is hereby amended to read as follows:

"Section 3.—Seating of Delegates, Alternates and Substitutes.

"Only duly elected delegates or their elected alternates may be seated at any session of the House of Delegates, except that the Secretary of the Association shall have the power, in the absence of the duly elected delegates or their alternates to appoint a substitute to act in the place and stead of said elected delegate or alternate, and which said substitute shall have the same voting rights and powers of the duly elected delegate or his alternate."

Vice-Speaker Randel: The amendment to the by-laws will be referred to Reference Committee No. 4.

Dr. Gibbons: This is a resolution on the grievance committee:

Whereas, The House of Delegates of the A.M.A. has adopted a resolution urging all constituent medical associations to form "grievance committees" to hear complaints from the public; and

Whereas, C.M.A. now has nineteen "grievance committees" in operation, offering the public a means for the arbitration of complaints concerning the 11,000 members of organized medicine; and

Whereas, There are an estimated 5,000 licensed physicians practicing in this state who are not members of organized medicine and therefore beyond its jurisdiction; and

Whereas, Unethical acts on the part of any doctor reflect on the medical profession as a whole, and it is essential that some method be devised whereby the public may be furnished with a means of arbitrating disputes between patients and non-member physicians; now, therefore, be it

Resolved, That C.M.A. undertake a study of ways and means to enable the public to register complaints against any physician licensed in this state and have controversies properly adjudicated, and be it further

Resolved, That if it can be demonstrated that the establishment of such a forum would be feasible and effective, that proper steps be taken to acquaint the public with its existence.

Vice-Speaker Randel: That will be referred to reference committee No. 3.

Dr. Gibbons: This is a resolution on falsification of C.P.S. fees:

Whereas, A number of doctors who accept C.P.S. cases are reported to have presented false claims for service; and

Whereas, These false claims are alleged to have cost the funds of C.P.S. about one million dollars during the last year; and

Whereas, This reported falsification reflects both on the management of C.P.S. and the integrity of the physicians involved; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association recommends that each component county medical society cooperate in helping to establish facts and in proceeding with suitable disciplinary measures against any of its members found guilty of such practices.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. Gibbons: This is a resolution on the Crippled Children's Act:

Whereas, The Crippled Children's Act was passed originally to secure the best restorative care for the needy handicapped and crippled children of California and did not define economic standards; and

Whereas, The medical profession accepted its share of the financial burden of this care by agreeing to a low fee schedule; and

Whereas, Cases seen under the auspices of this act have, due to frequently arbitrary action by the administrative personnel of the Crippled Children's Agency, included people who should be treated by a physician as private and not as quasi charity patients; and

Whereas, Some of the cases which are accepted by the agency are asked to reimburse it to the extent of their ability; and

Whereas, The type of conditions considered crippling are ever increasing; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association instruct the Council of C.M.A. to institute negotiations with the California State Department of Health with the view of eliminating the elastic economic and medical standards which may be used in the administration of this Act as well as with the aim of eliminating such other abusive practices as have rendered the Crippled Children's Act an entering wedge of socialized medicine in California; and be it further

Resolved, That such negotiations and consultations be of a periodic order, being initiated by the Council of C.M.A. at least every two years.

Vice-Speaker Randel: That resolution will be referred to reference committee No. 3.

Dr. Gibbons: This is a resolution on the Prepaid Medical Care Commission:

Whereas, California medicine has led the way in the matter of doctor controlled prepaid medical care and has thereby materially slowed the inroads of socialized medicine; and

Whereas, Any attempt on the part of organized medicine to adopt a uniform average fee schedule based on average fees would be fraught at this time with the danger of jeopardizing the success of such prepaid medical care plans; and

Whereas, Many committees, city, county and state, have been or are separately working on the many facets of the problem, such as studying industrial fee schedules, studying C.P.S. fee schedules, negotiating with labor unions and many others; and

Whereas, It is of signal importance that all such efforts be coordinated and carried out on a statewide level; now, therefore, be it

Resolved, That a permanent Prepaid Medical Care Commission be and is hereby created whose function it shall be to study, keep records upon and recommend action to the C.M.A. and its component bodies on all types of prepaid medical care, including C.P.S., insurance company plans, industrial accident schedules, union labor plans, voluntary, compulsory, governmental and non-governmental plans.

It shall be the duty of the commission to employ, as necessary, special consultants in the field of insurance economics and statistics as required in the solution of problems in these fields.

The commission shall consist of nine members of the California Medical Association appointed by the president of the California Medical Association; and approved by the Council of the California Medical Association;

That of the nine members first so appointed, three shall serve one year, three shall serve two years and three shall serve three years and that vacancies as they occur by expiration of term of service or otherwise shall be filled by appointment by the President of the California Medical Association subject to the approval of the Council;

That three of the nine members of said Commission be designated by the President of the California Medical Association, respectively chairman, vice-chairman and secretary of the commission, and that the three members so appointed serve ex-officio as executive committee of the commission, whose function shall be to conduct the business of the commission in the interim between its meetings;

That said commission be and is hereby directed to report to and be guided by instructions of the House of Delegates of the California Medical Association in regular annual convention assembled and that in the interim between said conventions the commission be and is hereby directed to report to and receive instructions from the Council of the California Medical Association.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3. Dr. Davis of Santa Clara County.

Dr. Davis (Santa Clara County): I would like to allay your apprehensions by saying that I only have three resolutions. The first I would like to designate as an emergency resolution:

Whereas, The 1951 House of Delegates of the California Medical Association at the May meeting approved a resolution recommending that California Physicians' Service assume the initiative in providing care for servicemen's dependents through a plan similar to that which was then in operation in conjunction with the Veterans Administration; and

Whereas, A similar resolution simultaneously introduced to the administrative members of California Physicians' Service was given similar endorsement; and

Whereas, The American Medical Association has opposed any revival of the old E.M.I.C. plan; and

Whereas, Congressional hearings have shown great public interest and demand for the provision of care for servicemen's dependents; and

Whereas, It is obvious that there are only three methods whereby the Armed Forces can afford such care, namely

(1) By physicians and surgeons in military service

(2) by a plan similar to the unsatisfactory E.M.I.C. plan of World War II

(3) by private physicians and surgeons through plans similar to the Veterans Care plan of California Physicians' Service; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association reaffirm its request to California Physicians' Service to take the initiative in such a program; and, be it further

Resolved, That California Physicians' Service be encouraged to negotiate such contracts as are necessary regardless of the action or inaction of the National Blue Shield Associations; and, be it further

Resolved, That time is of the essence and that this resolution be considered an emergency one in order that action may be taken now while the Congressional Committees are holding hearings on this subject; and, be it further

Resolved, That a copy of this resolution together with sufficient explanatory material in the form of a covering letter be sent to the Health Sub-Committee of the Senate Labor and Public Welfare Committee at the earliest possible moment.

Vice-Speaker Randel: Unless there is some objection, this resolution will be considered an emergency and, in compliance with the request of Dr. Davis, it will be referred to reference committee No. 3.

Dr. Ward.

Dr. Robertson Ward (San Francisco County): Am I incorrect in assuming that it takes a two-thirds vote of this House to make a resolution an emergency or is that the privilege of the Chair, to just declare it?

Vice-Speaker Randel: It does require a two-thirds vote of this House. If there is any objection, and if it is the desire of this House, we can proceed with the determination of whether this or any other resolution may or may not be considered an emergency.

Dr. Ward: Is it the decision of the Chair as to whether it is an emergency or not, unless somebody objects?

Vice-Speaker Randel: Well, I will rule that the resolution is an emergency unless there is an objection.

Dr. Askey: In previous years it was my understanding that the resolutions were referred to the committee for study and report to this House in regard to whether, in their opinion, it was an emergency, whereupon the House would vote as to whether it was emergency and then it would take a two-thirds vote to carry it. Am I incorrect in that, sir?

Vice-Speaker Randel: We would consider that interpretation as being correct, Dr. Askey. Therefore the Chair rules that this resolution and any other wherein a request is made to consider them an emergency will be referred to the reference committee in question and then when it is introduced or reported on, at that time the House may decide whether or not it is an emergency measure.

Will you proceed, Dr. Davis?

Dr. Davis: The other two are not emergency resolutions unless so designated by the committee.

Whereas, The American Medical Association has expressed editorially in the *Journal* dated April 12, 1952, a desire for amendments to the income tax laws providing for tax postponements for monies set aside for pensions of persons engaged in private individual enterprise, including doctors of medicine; and

Whereas, The House of Delegates of the California Medical Association has expressed an interest in amortizing over an appropriate period the cost of all technical and professional training; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association request the American Medical Association to expand its program of tax reform to include the capitalization of the costs of technical and professional education for tax amortization over an appropriate period.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. Davis:

Whereas, The 1951 House of Delegates of the California Medical Association at the May meeting passed a resolution concerning the financial contributions made to the Crippled Children's program by the local, state and federal governments; and

Whereas, This resolution called attention to the fact that less than 10 per cent of the funds are appropriated by the Federal Government; and

Whereas, The resolution took cognizance of the fact that, despite the small proportion of federal monies invested, the administrative policies are dictated by the administrators of the federal act; and

Whereas, The resolution advocated "if necessary that state and local governments conduct these programs themselves without federal assistance"; and

Whereas, This matter has come to the attention of the California State Legislature in its budgetary meeting in March, 1952; and

Whereas, This matter has been under consideration by the Interim Ways and Means Committee and is also being considered by the Interim Public Health Committee at the present time; and

Whereas, These committees will report to the 1953 Legislature in January of that year offering such suggestions as they deem necessary and advisable; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association hereby reaffirms its stand taken in 1951 that the Crippled Children's Act, as largely financed by the state and local governments, is a state and local affair and should not be subject to the whims and fancies of federal administrators no matter how sincere; and, be it further

Resolved, That the House of Delegates of the California Medical Association instructs the secretary of the Association to express its appreciation to the respective committees of the California State Legislature which have recognized and are considering this problem, and offer any assistance within the power of the Association which these committees may request in order that this odious practice may be eliminated.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. Kirchner is recognized.

Dr. Arthur A. Kirchner (Los Angeles County): Mr. Speaker, and members of the House of Delegates: I wish to offer an amendment to the by-laws relating to alternates and delegates, as follows:

Resolved, That Chapter V, Section 1, of the By-Laws of the California Medical Association be amended to read:

"Each component society shall elect the number of Delegates and Alternates to which the component society is entitled. At least sixty days prior to the next scheduled session the secretary of each component society shall forward to the secretary-treasurer of the Association, on forms provided by the Association, the names and addresses of these Delegates and Alternates, and shall certify thereon the term of service of each individual.

"Failure to conform to this provision may, at the discretion of the House, constitute grounds for disqualification of any delegation or individual."

And Be it Further Resolved, That Chapter V, Section 3 of the By-Laws be amended to read:

"Only duly elected Delegates or Alternates may be seated at any session of the House of Delegates."

Vice-Speaker Randel: This amendment to the by-laws will be referred to reference committee No. 4.

Dr. Bailey of Los Angeles.

Dr. Wilbur Bailey: Mr. Speaker, this is not an official resolution of our delegation of Los Angeles. The fact is it wasn't written by me but I think you will see, when I present it the loopholes in our present Medical Practice Act and perhaps we can begin to fill the loopholes:

Whereas, The Medical Practice Act, as set forth in the Business and Professions Code of California, provides that unprofessional conduct justifies subjecting an offending licensee to disciplinary procedure: and

Whereas, In the code, acts and conduct constituting unprofessional conduct are specifically set forth and described; and

Whereas, There is thus no provision authorizing proceedings against licensees who may be guilty of immoral or reprehensible conduct not specifically defined or provided for; now, therefore, be it

Resolved, That it is the considered opinion of this body that the aforesaid Medical Practice Act should be amended by the incorporation therein, in Article 13, of Chapter 5 of Division 2, of the Business and Professions Code, of an additional section providing, in substance, that "Gross immorality constitutes unprofessional conduct"; and, be it further

Resolved, That a copy of this resolution be sent to each member of the Board of Medical Examiners of the State of California.

Vice-Speaker Randel: That will be referred to reference committee No. 3.

Dr. Carey.

Dr. H. L. Carey (Butte-Glenn County):

Whereas, Many small hospitals are to be built in the State of California within the next few years; and

Whereas, The small hospital is a unique enterprise unto itself, presenting many problems in design, construction and operation; and

Whereas, Adequate guidance is completely lacking either from the federal or state public health department; now, therefore, be it

Resolved, That a permanent file of each unit placed in operation within the past five years containing the complete history of the financing, construction, and operation, with recommendations for others in similar circumstances be kept by the C.M.A. Committee on Rural Health and that each new unit be requested to add their history to this file.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

The Chair recognizes Dr. Dozier of Sacramento.

Dr. Dave E. Dozier (Sacramento County): This resolution amends the by-laws of the California Medical Association concerning dues:

Whereas, Necessary costs of operation have compelled national, state and county medical societies in many instances to raise annual dues to increasingly large figures, the total of which may amount to a considerable sum, and

Whereas, Many senior members of our society still in active but limited practice desire to retain regular membership in the California Medical Association rather than accept classification as retired members, and

Whereas, In a certain number of instances because of curtailed practice, and so forth, this works an undue financial hardship on these members, and

Whereas, As our constitution and by-laws are now written, there is at present no legal manner by which either the Council of the C.M.A. or the House of Delegates can grant pecuniary relief to these older members who from time to time seek assistance; now, therefore, be it

Resolved, That the by-laws of the California Medical Association be amended as follows:

Chapter X—Funds, Assessments, et cetera.

Section 2—Dues.

A third sub-section be added to read as follows:

(c) Upon proper petition, the Council shall have the right to waive all dues and assessments to any member who is known to be an honorable member of the California Medical Association and who

1. Has paid dues to the California Medical Association for a period of 35 years or more, or who

2. Has passed the age of 72 and paid dues to the California Medical Association for the preceding twenty years, or who

3. Presents satisfactory certification that he or she is at least 75 per cent disabled in the current fiscal year.

Such petition shall be in each instance accompanied by a letter of approval or endorsement by the directors of the member's local county medical society.

Vice-Speaker Randel: This proposed amendment to the by-laws will be presented to reference committee No. 4.

Dr. McCarthy.

Dr. J. B. McCarthy (Monterey County):

Whereas, Recent publicity has revealed astounding irregularities in California Physicians' Service among both its physician members and its executive officers; and

Whereas, Charges have been brought in the public press of criminal acts by the physician members and of criminal negligence by its executive officers; and

Whereas, As far as the public knows these charges have been substantiated and the acts condoned by the executives of C.P.S.; and

Whereas, These charges have brought great consternation and embarrassment to the vast majority of C.P.S. members and the upright, law abiding people of California; now, therefore, be it

Resolved, That the California Medical Association take immediate action to affirm or deny these charges; and, be it further

Resolved, That in those cases in which the charges are affirmed and sufficient legal evidence obtained, immediate prosecution of the offenders be instituted; and, be it further

Resolved, That the executives of C.P.S. responsible for the laxity in enforcement of the rules be summarily dismissed from their positions.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. McCarthy:

Whereas, The recent publicity given to the alleged fraud scandal in California Physicians' Service caused much adverse criticism of the medical profession as a whole with resulting unexplainable embarrassment to the members of C.M.A.; and

Whereas, It was first publicized that no further action would be taken by C.P.S.; and

Whereas, Prosecution should have preceded any release of information to the public; now, therefore, be it

Resolved, That the California Medical Association institute an immediate investigation of the C.P.S. executives responsible for the laxity in enforcement of the rules; and, be it further

Resolved, That such responsible executives be summarily dismissed.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. McCarthy:

Whereas, The original intention of California Physicians' Service was to furnish nearly complete medical health insurance to low and low-medium income families in a single simple policy; and

Whereas, California Physicians' Service has expanded and become more complicated and now has such a number of policies that it causes confusion among the public, physician members and even the C.P.S. executives, and

Whereas, C.P.S. is now competing with numerous excellent private insurance companies who can and do furnish adequate medical coverage, especially to medium and high income families; now, therefore, be it

Resolved, That California Physicians' Service return to its original policy, namely to furnish adequate coverage to low and low-medium income families in a single, easily understood policy; and be it further

Resolved, That California Physicians' Service recall as rapidly as feasible all other contracts with individuals or groups of individuals; and be it further

Resolved, That an emergency be declared so that immediate action may be taken on this important matter.

Vice-Speaker Randel: That will go to reference committee No. 3.

Dr. Leon P. Fox (Santa Clara County):

Whereas, The public relations program of the medical profession in California is of necessity the largest and most outstanding in the country; and

Whereas, Experience has shown that timing, immediate action and efficiency are imperative and best accomplished when the public relations department works independently of the administrative offices; and

Whereas, The present public relations department is somewhat hamstrung by the apparent lack of a far-reaching plan and by delay of action because of channeling through the C.M.A. administrative offices, and

Whereas, The C.M.A. is now a large organization requiring the full time executive secretary whose duties are multiplying yearly; now, therefore, be it

Resolved, That the House of Delegates of the C.M.A. designate the public relations department as a separate entity from the Executive Secretary's office; and be it further

Resolved, That the public relations department be under direct supervision of a director of public relations who shall be appointed by and answerable to the Council.

Vice-Speaker Randel: This resolution will be referred to reference committee No. 3.

Dr. Albert G. Miller (San Mateo County):

Whereas, The threat of socialization and nationalization is definitely with us; and

Whereas, It is urgent that we further emphasize our stand against such federal trends; now, therefore, be it

Resolved, That the California Medical Association instruct its delegates to the American Medical Association to sponsor a resolution at the A.M.A. House of Delegates' session condemning the type of autocracy exhibited in the recent seizure of the steel plants by the President of the United States.

Vice-Speaker Randel: That will be referred to reference committee No. 3.

Are there any other resolutions to be presented at this time? Apparently, no one has anything to present.

Before adjourning we should like to remind the personnel members of the various reference committees to come forward and introduce themselves to each other, particularly their chairmen.

. . . Announcements as to meetings of the reference committees. . . .

Speaker Charnock: I wish to thank Dr. Craig for his work with reference committee No. 3.

Is there anything else to be presented at this time?

A Delegate: May I ask for clarification on one thing? Must these resolutions be introduced twenty-four hours ahead of time?

Speaker Charnock: They have to be introduced twenty-four hours ahead of time. That is twenty-four hours before the meeting on Tuesday of the House. The chairman of the district delegation will then report at the second meeting of the House of Delegates the results of the election and when so reported the members elected will assume office as District Councilors subject to the House's approval. Does that clear that up?

Is there anything else to be brought before this meeting tonight? Are there any resolutions or anything? You have all been very patient with the interruptions that we have had and the inevitable delays. I will accept a motion to adjourn until 1:30 Tuesday.

. . . It was moved, seconded and carried that the meeting adjourn. . . .

. . . The meeting adjourned at 9:30 p.m. . . .

SECOND MEETING
APRIL 29, 1952

The second meeting of the House of Delegates of the 81st Annual Session of the California Medical Association was held in the Music Room of the Biltmore Hotel, Los Angeles, California, Tuesday, April 29, 1952. The meeting was called to order at 1:30 p.m. by the Speaker of the House, Dr. Donald A. Charnock.

Speaker Charnock: The second meeting will please be in order. We will have the supplemental report of the credentials committee by Dr. Foster.

Dr. Thomas N. Foster: Mr. Speaker, a quorum is present and seated, 137 members by the last counting of everybody here.

Speaker Charnock: Thank you, Dr. Foster.

With the permission of the House, we will do as we did in the first session and eliminate the roll call, depending upon these signed cards for the roll call. Is there any objection from the House? Hearing none, the Chair will declare that the roll call has been completed by the signing of the cards. The heads of each delegation again will be responsible for the voting of their members.

I want to say right here that this new change with the elimination of the roll call is due to the suggestion of Dr. Foster, the chairman of the credentials committee, and to him is due the credit for saving us forty-five minutes.

We will next have the secretary's announcements of the council's selection of a place for the 1953 Annual Session.

Secretary Albert C. Daniels: Mr. Speaker, the Council decided to meet at the Biltmore Hotel in Los Angeles, beginning Sunday, May 24, 1953.

Speaker Charnock: Thank you, Dr. Daniels.

The next number on the agenda is the election of officers. The office of President-Elect is open, and nominations will now be received.

ELECTION OF OFFICERS

Dr. Ralph Teall (Sacramento): Members of the House of Delegates, about once every twenty years it becomes the privilege of the Sacramento County medical society which is the oldest medical society in the State of California, to contribute to the California Medical Association one of its members to serve as president of this group.

This year we felt it was time the California Medical Association had as its leader a representative of that portion of the Sacramento Valley which our newspapers are pleased to call with good reason "Superior California."

We sought diligently and faithfully among our membership for one who might have the best qualifications which we regard as important in the office of president of the California Medical Association. It was our feeling that the California Medical Association is in a difficult period of its growth. It is vigorous and active. It requires diligent, vigorous, active, aggressive leadership, and it requires as its president a man who can carry to every contact he makes the feeling of aggressiveness for the interests of all.

As we looked around among our membership, we considered two or three people, and finally settled on one man who to our mind combined those attributes. We are 100 per cent for this guy for various reasons, and I'd like to tell you what some of those reasons are.

He graduated from Stanford. We really can't help that. That's a long time back and we'll have to forgive him for it. He was the president of the Sacramento Society for Medical Improvement and that is an error that some of the rest of us have made to our great sorrow. He has always been interested in Sacramento and the development of prepaid medical care plans, and was a member of the first board of directors of the first Blue Cross medical care plan in the United States, and had a number of years' experience as a member of the board of that organization. His interest in problems of medical care insurance has stemmed from that date.

When the California Physicians' Service was brought into being, he was among those of us who were not entirely sympathetic with its intrusions into Sacramento, but as the years went on, he became convinced as most of the men in this room have become convinced, that with its shortcomings and its difficulties, the future of voluntary health insurance was in large measure tied up with the life of the California Physicians' Service and that he therefore had no right nor reason to remain aloof from operations of that organization. Therefore, in spite of a great deal of local criticism in our own society, he accepted a position on the Board of Trustees of the California Physicians' Service, where he now sits and where he has rendered good yeoman service. For nine years he served as our District Councilor for the Council of the California Medical Association. I mention these things primarily because they indicate that he has some knowledge of the problems of organized medicine and the problems of the California Medical Association throughout the breadth of our state.

He is presently extremely active in the affairs of this organization. He is a member of five of the most active committees of the California Medical Association. As I have already indicated, he is a member of the Board of Trustees of C.P.S. and a member of the executive committee of that organization. In addition, he is a member of the Public Relations Committee, a member of the Industrial Accident Fee Schedule Committee, where I happened to sit with him and where we frequently disagreed, and he is a member of the Committee on the Board of Nurse Examiners, and chairman of the Committee on Medical Ethics, and a very active member of our Legislative Committee where he is very frequently called on because of the fact that he lives in Sacramento, to meet with all kinds of hearings and subcommittees of our Legislature, and where he is very highly regarded both by the members of our own Legislative Committee and by the members of the Legislature.

Because of his experience we know that he has the ability to conduct himself in this highest office of the California Medical Association. We do not believe that his experience entitles him to any reward at all, but we do feel that the California Medical Association, being fully aware of its need for active, aggressive leadership in the coming years, would find no better choice than the man from the land the Lord remembered, Frank MacDonald. (Applause.)

DR. LESLIE B. MAGOON (Santa Clara County): The California Medical Association has need for a man in a position of leadership who has the vision to see the problems, who has the intelligence to solve the problems, and who has the aggressive energy to implement the solution of those problems. On behalf of myself and on behalf of the delegation from Santa Clara County, it is my pleasure to second the nomination of Frank MacDonald. (Applause.)

DR. JUSTIN J. STEIN (Los Angeles County): I consider it a very distinct privilege to second the nomination of Frank MacDonald for the office of President-Elect of the California Medical Association. (Applause.)

DR. ROBERTSON WARD (San Francisco County): It also gives me great pleasure to second the nomination of Frank MacDonald for President-Elect.

SPEAKER CHARNOCK: Those seconds are not necessary. Are there any other seconds? Are there any other nominations for the office of President-Elect?

DR. GARNETT CHENEY (San Francisco County): I wish to place the name of John W. Green before this House for President-Elect of the California Medical Association, but before doing that formally, I wish to comment and emphasize some of the qualifications which Dr. Green possesses which in my mind justify his selection for the highest office that we can offer anyone in this state through our medical society.

Many of you have known Dr. Green through many years. Some of us have not been so well acquainted with him perhaps. Nevertheless, I will review and briefly, some of those qualifications which I believe make Dr. Green the logical and ideal and acceptable choice for this high position.

Dr. Green came out of the state of Indiana to Vallejo in 1921 by way of the Navy, World War I, and has been in practice in Vallejo for thirty years. I'd like to emphasize he has maintained a high standard of professional practice in his home town throughout all this period and has also had the time and energy to be a civic leader and has been a leader of many of the functions and activities of his town, which was a town when he came there from the Navy, and now I think we can call a city. Those of us that live near there certainly feel that way about it.

He has shown not only leadership in regard to the profession, but in his local community where he has maintained that leadership vigorously and energetically for a long period of time. He has been very active in this Association for a number of years. He has been in the House of Delegates for twelve years, a long period of service, making him thoroughly familiar with the problems of our society. He has also served eleven years on the Council of the California Medical Association, acted on a number of important committees and served in a number of capacities. He has always done this work well and enthusiastically and always responded to the call of duty, no matter how much of his energy and time it took.

He was also in the original foundation of the California Physicians' Service and is thoroughly familiar with the problems which have taken us to the mat so often, so I feel he is qualified as well as any man here to have a well founded and rational viewpoint of this California Physicians' Service problem which we spend so much time discussing.

He has also been very active in public health and its development and growth. Now even more important perhaps, he has been a delegate to the American Medical Association for five years and is still a delegate which takes him east on many occasions and has acquainted him with many of our problems on a national level as well as on our state level and in our county society level.

Now I emphasize that it might be a recommendation that a man go to Washington these days. I fully appreciate that that has intimations, perhaps, that would not seem to be a very important qualification. However, waiving that for the moment, I wish to state Dr. Green has been to Washington on a number of occasions. He was there for the original hearings on the Murray-Wagner-Dingell Bill, which you remember, and spent some three weeks there at that time and is thoroughly familiar at the top level with the civil-medical and medical economic problems that face us here, not only locally in this state, but also throughout the country. I think that is a most important matter for your consideration. The experience over and above the state experience he has had gives him an even broader viewpoint on the economic medical problems that face us today.

I'd like to say that throughout all these years Dr. Green has been energetic. He has responded in every way to the call of duty to the profession. Again I reiterate in his own home town and county, state level and American Medical Association level and special committees he has represented in Washington, D. C. I am perfectly satisfied that he will have the same vigor and same energy physically to carry on the duties such as we may assign to him for the coming year that he has in the past and will do them honestly, energetically and well.

Remember again his qualifications; long periods of service for this state society, a long period of service on the A.M.A. and a longer period of time, repeated periods of time, in Washington, D. C., considering our problems. Mr. Chairman, I consider it a distinct privilege and a personal pleasure to nominate Dr. John W. Green for President-Elect for the California Medical Association. Fellow Delegates, I hope to have your favorable support for this nomination. Thank you. (Applause.)

DR. L. H. FRASER (Alameda-Contra Costa County): In 1951 at Atlantic City your President of the

A.M.A., Dr. John Cline, in his inaugural address made a plea for the physicians in this country to participate in the political endeavors, and particularly in civic pursuits. I think that we've all recognized that necessity.

I want to speak on behalf of John Green who has exemplified his responsibility to his city more than most, I would say, physicians in this audience. I think that we should recognize as part of a candidate his ability and his willingness to contribute something to the civic advancement of his community. I think that Dr. Green has served his profession for a long period of time and certainly well. He has served this association exceedingly well all of his life and in his own city of Vallejo, and I beg your support of Dr. John Green. (Applause.)

Dr. Logan Gray (San Mateo County): When a man has served his county and his association long and with distinction, it is the most natural thing in the world for his colleagues to want to place him in a position of high leadership. This is partly because of a desire to give him recognition and partly because of the value of utilizing his accumulated wisdom.

As long as I have known Dr. Green, and I was a boy in Solano County and came from there, he has been the kind of doctor who has been putting good will and respect for physicians into the bank of public prestige from which we all from time to time have to draw. Since becoming a physician I found that, besides being a civic leader, he is a leader in his profession. In all these local, state and national offices that he has had, there are few of us who haven't in some way had his work touch us personally.

It gives me great personal pleasure to second the nomination of Dr. Green as President-Elect of the California Medical Association. (Applause.)

Dr. Neil J. Dau (Fresno County): It has been my great pleasure for the last couple of years to serve on the Council along with Pete Green whom I admire very much. We like his judgment and he is always there to do the job. I take great honor in being able to second the nomination of Pete Green for President-Elect of this Association.

Dr. J. C. Crane: It gives me great pleasure to second the nomination of John W. Green for President-Elect. I too served on the Council for six years with him. I followed him around in Washington on one stretch. I believe it is well to remember the old axiom, everything else being equal, remember the old best friends first. (Applause.)

Dr. S. J. McClendon: Mr. Speaker and members of the House of Delegates: My loyalty and friendship prompt me to second the nomination. For many years since World War I, I have known Pete Green, and in my experience nobody in California medicine has rendered more sincere and honest service. I have served with him on the Council and various committees, on the A.M.A. delegation, and I do not know of anyone who has given more of his heart and courage to our organization than Pete.

Dr. Karl Schaupp (San Francisco): Pete Green whom we have known in the work of the Association, the year that I served, is a kindly, gentle person who carried out the wishes of his Association; who never himself looked for anything beyond a serving of his duty.

During the war, a good many of you were away and would not know, but those that were here do know who had the responsibilities that we had in Vallejo and the Navy yards and in the building of the hospital, Pete Green was the one to whom we turned and who carried the load. He has always done, he has always carried out the wishes of his Association. There were times he didn't agree with the policy when the policy was established, but being an officer of the Association, he carried those through conscientiously, whether or not he believed it would be the right thing or not. He never opposed the C.P.S. after it was accepted because he decided to help make it the best type of an organization. I would feel remiss in my duty as a member of this Association if I did not stand up and say to you today that I believe Pete Green is the man that we should have for a President. (Applause.)

Speaker Charnock: Are there any other seconds? Any other nominations for the office of President-Elect?

The Chair hearing none, declares the nominations closed. They are closed.

The tellers will please come forward and get the ballots. We will vote by ballot. The ballots are numbered and this will be ballot No. 1. I do not think it will be too confusing.

Gentlemen, all the alternates and visitors who are not eligible to vote, will you please stand up at the end of the room for a moment or two so that we don't get confused in this voting.

Has everybody voted once? While the tellers are counting the ballots, we will proceed with the election of the next office, that of Speaker, and the Chair will recognize Dr. E. C. Halley of Fresno.

Dr. E. C. Halley (Fresno County): Members of the House of Delegates, I come before you this afternoon, full realizing the importance of the speakership of this great organization. I am also mindful of the immense amount of duties that befall the Speaker, not in convention alone, but throughout the whole year of his tenure of office. I think you have noted here in the last few days some of the decisions we have made or are about to make that are becoming of increasing importance in our daily practice of medicine and will undoubtedly continue to be more important in the future.

It is for these reasons that it is my considered opinion that I believe anybody proposed for the speakership of an organization of this character should be possessed of those attributes that befit that office. I believe he should be of keen intelligence, of unquestioned integrity. He should be versed in political medicine, he should be a good organizer, and I think he should of course be a good parliamentarian.

Now I have just such a man to offer you. He has been my friend for twenty years. For an equal length of time he has been a member of the Fresno County Medical Society. He has been a friend of all of us in the Fresno County Medical Society and a good adviser to many of us. I will say this, however, about my candidate; he abhors featherbedding. He is not like the man on the train riding on the rear caboose of the platform only to see the world after it is past. You see, he is used to riding up in the engine and making decisions in advance.

He has been active in state and local affairs for many years. He is Past President of the Fresno County Medical Society, past president of the California Trudeau Society. He has been active on committee assignment in the House of Delegates of the Association. He has also served many years here off and on as Delegate to this House. He is presently completing a successful year as Vice-Speaker of this organization and he is versed in the affairs and knowledge of political medicine, medical economics, and he knows good public relations.

He feels that the public faith in us as doctors is a sacred trust, and he believes this very trust in us by the public should help mold the destiny of this organization.

He comes from no political subdivision of this state; I mean no geographical subdivision of this state. He comes from the center of the state, and I assure you he would never belong to any subdivision of this Association. It is therefore my pleasure to place in nomination for the office of Speaker of the House of Delegates the name of Henry A. Randel of Fresno County. (Applause.)

Speaker Charnock: Dr. Randel's name has been placed in nomination. Is there any second to this?

Dr. J. E. Vaughan (Kern County): It gives me great pleasure to second the nomination of Dr. Randel. We have found him very efficient and a great and willing worker.

Speaker Charnock: Are there any further nominations?

Dr. Thomas E. Farthing (San Mateo County): It has been my privilege for the past year to sit around a large and long conference table with Henry Randel, and I have become progressively impressed that here is an individual who possesses talents that California medicine should utilize. He has unusual integrity, courage and ability to do what he thinks is right.

I take great pleasure in offering my personal second to the nomination. (Applause.)

Speaker Charnock: Are there any other seconds?

Dr. Verne Ghormley (Fresno County): Mr. Speaker, members of the House of Delegates, it was our privilege a year ago in a similar session to speak along similar lines. At that time we felt there was a definite place for a man of ability and integrity who had not earlier been fitted into previously established channels. We felt that at that time that ability was far more important in the affairs of the California Medical Association than the establishment of preformed patterns and deals of support in order to get support for your candidate.

Nothing has happened during the past year to change our opinion in this regard. In spite of possibly a few words of misunderstanding on this subject, I would like to reiterate that in speaking for this candidate there have been no deals made, and we feel that we want the open support, not only of our candidates but others that have a position or job to fill in C.M.A. and therefore reminding you of this, I wish to add my personal support to the nomination of Henry Randel for Speaker of the House of Delegates. (Applause.)

Speaker Charnock: Any more seconds?

. . . Vice-Speaker Randel assumed the Chair. . . .

Vice-Speaker Randel: Are there further nominations? Any additional nominations for the position of Speaker of the House? They are now in order.

Dr. E. Vincent Askey (Los Angeles County): Mr. Speaker, ladies and gentlemen: Someone has said that to understand the present or foretell the future one must be acquainted with what history tells of the past. I'm going to preface the nomination which I have in mind by giving you a little of the history. I'm well aware that some of us in this room are newcomers to California and you're welcome. That is what has made our state great. But some of us don't know some of the things that have gone to make a great state.

Yesterday, I was very pleased to hear the California Physicians' Service state that their president was not always the best man to serve as Chairman of the House of Delegates. The same thing occurred a little over twenty some years ago in the California Medical Association.

At that time the President of the California Medical Association was also the chairman of the House of Delegates. It was then decided at that time to elect a Speaker of the House of Delegates, who should be a trained man, who should probably be more than one year in office in order to know how best to serve you, and at that time our revered friend Dr. Edward Pallette was elected Speaker of the House of Delegates, and Dr. John Graves from San Francisco was the first Vice-Speaker. This went on for two or three years, and Dr. Graves was a little incapacitated and was older and it was thought that a man of more active ability, and with Dr. Graves' full consent, should be chosen. At this time Dr. Dewey Powell of Stockton, who comes from the same district as Fresno, was elected.

Then it was found that the California Medical Association offices being in San Francisco, that for the best interests of the California Medical Association, the chairman of the Council and the chairman of the Executive Committee who was the chairman of the Auditing Committee would probably be better if they came from the northern part of the state, where the offices were and where the reasons for things to be done were first apparent.

At that time after talking it over with the people of the House of Delegates and the Council, it was decided that for the best interests of the California medicine, that it would probably be a good idea if it were sort of an unwritten understanding that the chairman of the Council and the chairman of the Auditing Committee, who is executive Committee chairman, should be from the north. Then it was felt that that might, even if we had more votes in Southern California, that it might be a good idea if there were representation from the southern end of the state, and a sort of gentlemen's agreement at that time was made that therefore the Speaker of the House of Delegates and the Vice-Speaker of the House of Delegates should be all located in the Southern part of California. Dewey Powell, who was the Vice-Speaker at that time, was very much in favor of it and everybody concerned thought so, so that was it, and Dewey Powell, than whom there is no whomer—he is a fine gentleman—refused to run again and at that time Dr. Roble of Riverside was elected the Vice-Speaker of the House of Delegates.

Since that time this situation has gone on, and with reason, because your Executive Committee consists of the President, the President-Elect, which alternates every year as you know from south to north, so that there is almost equal representation of that; the chairman of the Council, and the chairman of the Executive Committee and the Speaker and the Secretary. It was thought then that by having the Speaker and the Vice-Speaker from Southern California, that that would equalize representation of the society, irrespective of any special dispensation or desires.

With those things and ideas, last year this precedent—it isn't a rule, you have a perfect right to do anything you want to—but last year that was upset and I think it was probably upset last year because of a lack of understanding of some of us who didn't know what history teaches us of the past for the benefit of California medicine. Therefore it is my belief that we in Southern California should not by reason of any votes whatsoever that we have or could get together, that we should take or make any efforts to get the chairmanship for the Auditing or Executive Committee in any way, shape or form. Neither do I believe that the speakership or vice-speakership should be taken from southern California.

Now I'm going to go a little farther. I think it was St. Paul who said, "Prove all things, but hold fast to that which is good." I believe that for the good of California medicine, the policy which has been followed is good. It has been followed and it was good. If for any reason you wish to change it, it should be changed with a full understanding of those things and not without misunderstanding. For that reason and for the fact that there have only been six Speakers of this House, none of whom has served less than three years, I believe that since the man who is now your Speaker has done a good job, he is fair, he is honorable, he has worked on committees for our Association without any regard to his personal betterment, and I therefore appeal to you to support the nomination for the Speaker of the House which I present to you, Dr. Donald A. Charnock. (Applause.)

Vice-Speaker Randel: Are there any other nominations to come before the House?

. . . The nomination was seconded. . . .

Vice-Speaker Randel: Hearing no further nominations, we declare the nominations closed.

Will the tellers appointed please come forward.

. . . Speaker Charnock resumed the Chair. . . .

Speaker Charnock: Will the secretary please read the report of the elections for President-Elect.

Secretary Albert C. Daniels: The vote was: Eisenhower 2 votes; MacDonald 89 and Green 137. (Applause.)

Speaker Charnock: The Chair will appoint Drs. Donald Cass, John Cline, Stanley Kneeshaw and Sam McClendon to escort Dr. Green to the platform. (Standing applause.)

Dr. John Green: Mr. Speaker, members of this House: I'm quite surprised at the outcome. However, I wish to accept this honor for my district, and for my county and for my town. I accept the responsibility. Thank you. (Applause.)

Speaker Charnock: Thank you, Dr. Green. While we are waiting for you gentlemen to ballot, may I read a telegram that has come to Dr. MacLean, President of the California Medical Association which he won't read.

"Please convey to the assembled delegates of the California Medical Association the Treasury Department's appreciation for your valued cooperation in the United States Defense Bond program from the standpoint of national economy, rearmament for defense, as well as for the welfare of the individual. Defense Bond program is of vital importance and we highly value your continuing support to the Savings Bond Division of the Treasury Department."

. . . Vice-Speaker Randel assumed the Chair. . . .

Vice-Speaker Randel: While the ballots are being counted, we will proceed with the election, and nominations are now open for the post of Vice-Speaker.

Dr. Edward C. Rosenow, Jr. (Los Angeles County): I have heard a lot of very excellent speeches, and I can assure you I could give an excellent one. My candidate has urged me not to, having heard me several times. I have been sitting with Dr. Halley for several hours now in conference in our reference committee No. 3, and he said he wouldn't mind very much if I stated that I'm not planning to run my candidate for the caboose, but I would like to have him in the position just back of the engine, the fireman's position.

I think it is very important at this time and in line with what Dr. Askey said, to hold to those things that are good of the past. I would like to say that that includes having a man with statewide experience, not just Southern California experience. The candidate I am going to propose has, well, he happens to live in Los Angeles County, but he has been for twelve years on the Council of the Los Angeles County Medical Association and is at present its president, a position that he serves with skill and distinction. In addition to this, he has been on the State Board of Medical Examiners for five years, which gives him a fair amount of statewide experience. He has also served for six years on the Council of C.M.A.

For these reasons and because I like him personally and because I live near him and occasionally tend to his medical needs, I pledge you I will keep him in good shape, I would like to nominate for Vice-Speaker, my good friend Wilbur Bailey of Los Angeles County. (Applause.)

VICE-SPEAKER RANDEL: Dr. Wilbur Bailey's name has been presented for nomination for Vice-Speaker. Are there any other nominations for this position?

DR. ERNEST W. HENDERSON (Alameda-Contra Costa County): I have been here about five years, and I think this is the first time I've ever inflicted myself upon you.

I would like at this time to present before you the name of Stanley Truman. Stanley has been several years around in this body. He is a past president of the General Practitioners' Association of the United States. He is a good parliamentarian. He has been on many of our reference committees, and this grass roots thing we bring to you now which comes up fairly late without any organization behind him, we would like to present at least at this time the name of Stanley Truman whom several of us feel would make an excellent Vice-Speaker. Thank you. (Applause.)

VICE-SPEAKER RANDEL: Dr. Stanley Truman's name has been presented.

DR. O. T. WOOD (Tehama County): Having known Stanley Truman since medical school days, it gives me great pleasure to second his nomination.

VICE-SPEAKER RANDEL: Are there any other nominations to come before this House? Hearing none, the position of Vice-Speaker is closed. The original tellers will please serve again. This is ballot No. 3.

SECRETARY DANIELS: The result of voting for Speaker: Shattuck 1 vote; Randel 73; Charnock 155. (Applause.)

. . . Speaker Charnock resumed the Chair. . . .

SPEAKER CHARNOCK: Thank you, gentlemen. I think we can go ahead now with our District Councilors. Will the chairman of District 1 please make the nominations.

A DELEGATE: Dr. Francis E. West.

SPEAKER CHARNOCK: Dr. Francis E. West has been placed in nomination by District No. 1. Is there any challenge from the House? The Chair hearing none, declares Dr. Francis E. West elected. (Applause.)

District No. 2. They already gave it to the secretary. Will the secretary please read this.

SECRETARY DANIELS: Dr. O. W. Wheeler from the Second District.

SPEAKER CHARNOCK: Is there any challenge from the House? The Chair hearing none, declares Dr. Wheeler elected.

District No. 4.

A DELEGATE: J. Philip Sampson.

SPEAKER CHARNOCK: J. Philip Sampson. Is there any challenge from the House? The Chair hearing none, declares Dr. Sampson elected.

The Seventh District.

A DELEGATE: Dr. Hartzell H. Ray.

SPEAKER CHARNOCK: Dr. Hartzell Ray. Is there any challenge from the House? The Chair hearing none, declares Dr. Ray elected.

The Tenth District.

A DELEGATE: Dr. W. L. Bostick.

SPEAKER CHARNOCK: Is there any challenge from the House? The Chair hearing none, declares Dr. Bostick elected.

That completes the District Councilors for three-year terms.

The Councilors-at-Large for three-year terms, Benjamin Frees and C. V. Thompson, terms expiring. Nominations are now in order.

DR. DONALD CASS (Los Angeles County): I would like to nominate Ben Frees to succeed himself as Councilor-at-Large. As you all know he is a member of the Board of Directors of the Los Angeles Chamber of Commerce. He served on the Los Angeles County Council for many years, was past president of the county medical society and has just finished one term on the Council of C.M.A.

I take pleasure in placing Ben Frees' name in nomination to succeed himself. (Applause.)

SPEAKER CHARNOCK: The Chair might have confused you in mentioning both these gentlemen at one time. There are two offices open. We will take first the office for which Benjamin Frees has just been nominated. Are there any further nominations for this office? The Chair hearing none, declares the nominations closed.

Dr. Thompson is recognized.

DR. C. V. THOMPSON (San Joaquin): For a moment I am still your Councilor-at-Large. I want to say first of all before I place the nomination, the name I have for you, that it has been a great pleasure to me to have served as your Councilor-at-Large for the past six years. It has been a great education and I have enjoyed it very much, and I wish to say to you and to the officers, if there are any errands, any duties, any chores that I can do, be sure to call upon me further.

A little further north in California we have a very excellent young man who I know will be an excellent Councilor-at-Large, and I wish to place in nomination the name of Hollis Carey of Gridley. It is a large district that has needed a Councilor for a long time. (Applause.)

SPEAKER CHARNOCK: Dr. Hollis Carey has been placed in nomination. Now are there any other nominations for this office?

DR. DAVE F. DOZIER (Sacramento): I wanted to second the nomination of Hollis Carey to be Councilor-at-Large to serve on our Council. You know, I think we ought to remember we're doctors first and general practitioners or specialists second. In Northern California we have been peculiarly aware of the problem of rural hospitalization and all of the things that go with it, and in Hollis Carey we have had one of the finest battlers for organized medicine that has ever been the privilege of us fellows to call a fellow doctor. He has done a grand job up there. He's right in there. He is full of aggressiveness, he has a lot of ideas, and he can be of invaluable help to our whole organization.

It is with great pleasure that I second the nomination of Hollis Carey. (Applause.)

DR. SIDNEY J. SHIPMAN (Councilor-at-Large): I would like to second it too. My primary purpose is to get up here to tell you how sorry I am to see Dr. Thompson retire. I can tell you he has been one of the most valuable members of the Council since I have been chairman. He has never failed to do everything he could for you and for us. His every interest has been the welfare of organized medicine and I want to express my warm personal gratitude to him. Thank you very much. (Applause.)

SPEAKER CHARNOCK: I am sure you voiced the feelings of all the Council officers.

Are there any other nominations? The Chair hearing none, declares the nominations closed. The Chair has been in error in that we did not vote on this first office, but there is just one nomination for the two offices. Maybe we can do that together.

All those in favor of Benjamin Frees and Hollis Carey, please signify by saying "aye." To the contrary? They are elected.

SPEAKER CHARNOCK: The next officers are Delegates to the American Medical Association. The first one is the incumbent, H. Gordon MacLean of Oakland.

DR. CYRIL J. ATTWOOD (Alameda-Contra Costa County): It is not my purpose, nor do I think it necessary to take very much of your time this afternoon, but I think that one of the most important functions we fulfill here is the selection of our representatives to the House of Delegates to the American Medical Association. It seems to me that it would be perfectly superfluous for me to take your time to recount to you the years of service, the integrity and intelligence of our own President, soon our immediate Past President. Both for myself therefore, and for the Alameda-Contra Costa delegation, I wish to place in nomination to you to succeed himself as Delegate to the American Medical Association, Dr. H. Gordon MacLean. (Applause.)

DR. EDWARD C. ROSENOW, JR. (Los Angeles County): I realize it is unnecessary to second it, but when asked by Dr. Attwood whether I would be willing to do so, I seized the opportunity to put in a plug for this very excellent physician and friend of ours. I am happy to second the nomination of Dr. MacLean.

SPEAKER CHARNOCK: Are there any other nominations for this office? The Chair hearing none, declares the nominations closed. How will you vote? All those in favor of Dr. H. Gordon MacLean will please signify by saying "aye." To the contrary? He is elected.

SPEAKER CHARNOCK: The next is that of E. Vincent Askey of Los Angeles, term expiring.

DR. EDWARD H. CRANE, JR. (Los Angeles): It is my pleasure to place the name of E. Vincent Askey in nomination for Delegate to the A.M.A. Dr. Askey has served well for several years. It is our fondest hope that he will be the Vice-Speaker of the American Medical Association next year. Therefore, I wish to thank all who would unite in backing Dr. Askey. (Applause.)

SPEAKER CHARNOCK: Are there any further nominations for this office? The Chair hearing none, declares the nominations closed. How will you vote? Those in favor of Dr. E. Vincent Askey will signify by saying "aye." To the contrary? He is elected.

SPEAKER CHARNOCK: The next is the office held by Dwight L. Wilbur of San Francisco, term expiring.

DR. ROBERTSON WARD (San Francisco): It gives me a great deal of pleasure to again place in nomination for Delegate to the American Medical Association the name of the present incumbent whose position I took when he was in the Navy. He is a great member of the team of Delegates to the American Medical Association, and is highly respected for his knowledge of things proper in the conduct of American Medical Association affairs. Really, anybody who has had contact with Dwight Wilbur and knows the way he conducts himself in organized medicine, doesn't need to be told about it. It is a great pleasure to nominate him to succeed himself as Delegate to the American Medical Association.

SPEAKER CHARNOCK: Are there further nominations for this office? The Chair hearing none, declares the nominations closed. Those in favor of returning Dwight Wilbur will signify by saying "aye." To the contrary? He is elected.

SPEAKER CHARNOCK: The next office is the one held by Donald Cass, term expiring.

DR. H. CLIFFORD LOOS (Los Angeles County): The man I wish to nominate for this position is so well known and has been eulogized so much that it is almost improper for me to enter the ranks of oratory here today. This man is at present the President of the California Physicians' Service and Past President of our Association. In viewing the activities of our Past Presidents, I think of the old axiom that there is nothing so dead as a past president. I think he looks pretty alive to me.

I wish to place in nomination Dr. Donald Cass.

SPEAKER CHARNOCK: Dr. Donald Cass has been placed in nomination to succeed himself. Are there any other nominations? The Chair hearing none, declares the nominations closed and Dr. Cass is elected. Excuse me. Those in favor of the election of Donald Cass will please signify by saying "aye." Contrary? Dr. Cass is elected.

SPEAKER CHARNOCK: The next office is that of Ralph B. Eusden of Long Beach, term expiring. Nominations are now in order. Are there any nominations for this office?

Dr. Benjamin Frees (Los Angeles County): I wish to place in nomination the name of J. Lafe Ludwig for this office. Lafe Ludwig has a very peculiar position in that he represents the west on the legislative committee of the A.M.A. and we feel certainly that in that position that he ought to be a Delegate to the American Medical Association, and it gives me great pleasure therefore to place his name in nomination.

Speaker Charnock: The name of Lafe Ludwig has been placed in nomination. Are there any other nominations? The Chair hearing none, declares the nominations closed and those who are in favor of Lafe Ludwig please signify by saying "aye." To the contrary? Dr. Ludwig is elected.

Speaker Charnock: The office held by Dr. R. Stanley Kneeshaw and whose term is expiring.

Dr. Paul D. Foster (Los Angeles County): I nominate Dr. R. Stanley Kneeshaw. For his many years of active service at county, national and state levels, he has had almost every honor we could bestow upon him in the county society, and has served several terms as Councilor, and as you well know he is a recent past president of C.M.A. He is just completing this term as Delegate, and we would be most happy to have you return him there again.

Speaker Charnock: The name of Dr. Kneeshaw has been placed in nomination. Are there any further nominations for this office? The Chair hearing none, declares the nominations closed. Those in favor of Dr. Kneeshaw will please signify by saying "aye." The contrary? He is elected.

Speaker Charnock: I will call upon the Secretary to give the results of the Vice-Speaker's election.

Secretary Daniels: Mr. Speaker, Truman 91 votes. Bailey 136. (Applause.)

Speaker Charnock: The post of Councilor-at-Large under Item E is now vacant by virtue of Dr. Bailey being elected Vice-Speaker of this House. The post of Councilor-at-Large for his term for one year is now open.

Dr. Donald Cass: I would like to propose Dr. Arthur A. Kirchner. He has served a long period on the Council of the Los Angeles County Medical Association. He has served on many very important committees, and he has attended many of our A.M.A. conventions. He has been before the Council of the C.M.A. on many occasions and can do a splendid job and I take pleasure in nominating Arthur Kirchner. (Applause.)

Speaker Charnock: Are there any further nominations for the one-year term of Councilor-at-Large? The Chair hearing none, declares the nominations closed. Those who are in favor of Dr. Kirchner's election will signify by saying "aye." To the contrary? He is elected.

. . . Vice-Speaker Randel assumed the Chair. . . .

Vice-Speaker Randel: Nominations are now in order for the position of Alternates to the American Medical Association.

The first incumbent is Leopold H. Fraser.

Dr. T. E. Reynolds (Alameda-Contra Costa): It gives me a great deal of pleasure to nominate the incumbent, Dr. L. H. Fraser, known to most of you for his many activities here and known in his own area pretty much as the Little Giant from Richmond. Dr. Fraser has been a tireless worker for good in the cause of organized medicine. Other than that he has been one of the outstanding civic leaders of his area. Many of you will also remember that he stood here for DeWitt Burnham last year and gave the report of the Committee of Eight in which he described himself to our amusement as the Little Man Behind the Eight Ball. Dr. L. H. Fraser.

Vice-Speaker Randel: Dr. Fraser has been nominated to succeed himself. Are there any other nominations for this post?

Dr. George I. Dawson (Napa County): I simply want to second the nomination of Dr. Fraser and make one comment. He has been on the spot on the job all the time he has served currently as Alternate to our President Gordon MacLean. He has attended each session while he has been an Alternate for the past year or so, and I take pleasure in seconding his nomination. (Applause.)

Vice-Speaker Randel: Those in favor of the election of Dr. Fraser to the post of Alternate will please signify by saying "aye." Those opposed? Dr. Fraser is elected.

Vice-Speaker Randel: The next name is Dr. H. Clifford Loos of Los Angeles.

Dr. Benjamin Frees: Mr. Speaker, it gives me a great deal of pleasure to go on record as nominating Clifford Loos to succeed himself. He is an outstanding man and he knows his way around the United States probably more than any other member that we have in the Los Angeles County Medical Society. Thank you.

Vice-Speaker Randel: Are there any other nominations? Those in favor of Dr. H. Clifford Loos being elected to the post of Alternate signify by saying "aye." Those opposed? Dr. Loos is elected.

Vice-Speaker Randel: The next name is that of Dr. Kelly Canelo of San Jose.

Dr. Newman: I would like to nominate the Atomic Bomb of the San Joaquin Valley, J. Frank Doughty, as Alternate to Dwight Wilbur.

Vice-Speaker Randel: Dr. Doughty's name has been presented as Alternate for Dr. Wilbur. Are there any other names to be presented? All those in favor of Dr. Doughty signify by saying "aye." Those opposed? Dr. Doughty is elected as an Alternate.

Vice-Speaker Randel: The next name is that of Dr. L. Duke Mahannah of Long Beach.

Dr. Arthur A. Kirchner: I would like to place in nomination the name of one of the members of the Los Angeles County Medical Association who has been active in our Council, has had many committee assignments, and has done a very fine job. He has also been active at state levels, and is a member of the Board of Trustees of C.P.S. He has also served very well on committee assignments at state levels, and on the national level. he has been present at all American Medical Association meetings and has done a lot of good work for our delegation. I feel that he deserves the honor of being nominated as an Alternate to the American Medical Association.

It gives me great pleasure to place in nomination the name of John Norman O'Neill.

Vice-Speaker Randel: Dr. O'Neill's name has been placed in nomination. Are there any other nominations? Hearing none, all those in favor of Dr. O'Neill signify by saying "aye." Those opposed? Dr. O'Neill is elected.

Vice-Speaker Randel: The next incumbent on the agenda is Dr. J. Lafe Ludwig.

Dr. Milton Cole (Los Angeles County): I would like to place in nomination for the position of the Alternate a doctor from Long Beach who is past president of the Long Beach branch of the Los Angeles County Medical Association. He is currently serving as Councilor on the Los Angeles County Medical Association. In placing his name in nomination, we feel he is not only well qualified for this position, but that he will serve to represent the 2,500 doctors who make up the membership of the outlying branch of the Los Angeles County Medical Association. I would like to place in nomination the name of Dr. H. Milton Van Dyke.

Vice-Speaker Randel: Dr. Van Dyke's name has been placed in nomination. Are there any other nominations? Hearing none, those in favor of Dr. Van Dyke signify by saying "aye." Those opposed? Dr. Van Dyke is elected Alternate.

Vice-Speaker Randel: The next incumbent is Russel V. Lee of Palo Alto.

Dr. William Burkhard (San Francisco County): I wish to place in nomination a young man. He has been working hard and going ahead. He looks easygoing but is a hard worker and aggressive and tactful. I would like to place the name of Burt Davis as Alternate for Dr. Stanley Kneeshaw.

Vice-Speaker Randel: Dr. Burt Davis' name has been presented. Are there any other nominations? All those in favor of Dr. Burt Davis signify by saying "aye." Those opposed? Dr. Davis is elected.

Vice-Speaker Randel: The next post for Alternate is open in place of Dr. John D. Ball.

Dr. L. K. Wilson (Orange County): It is with regret that we have to say at this time that we certainly miss John Ball. It is the first of our annual meetings in many years in which he was not active. As you recall, John passed away the latter part of December, leaving two vacancies in our district; that of Councilor to C.M.A. and the other as Alternate Delegate to A.M.A.

We wish at this time to present the name of our senior Delegate to this House, who has conscientiously worked many years, and I feel he is very well acquainted with the problems of the California Medical Association and that he will carry on very well as an Alternate to the A.M.A., Dr. J. P. Price of Santa Ana.

Vice-Speaker Randel: The name of Dr. Price has been placed in nomination.

Dr. Sidney J. Shipman: May I move we stand for a moment in memory of Dr. John Ball.

. . . Silent tribute to Dr. John Ball. . . .

. . . Speaker Charnock resumed the Chair. . . .

Speaker Charnock: We now have two posts on the C.M.A.-C.P.S. Liaison Committee.

A Delegate: We did not vote on the last nomination.

Vice-Speaker Randel: Apologies for that. Dr. Price's name was placed in nomination. Are there any other nominations? Those in favor of Dr. Price signify by saying "aye." Those opposed, "no." Dr. Price is elected Alternate.

Speaker Charnock: We now come to the two members of the C.M.A.-C.P.S. Liaison Committee. There are two positions which are open. We will proceed with nominations for those. I think that is something everybody forgot about.

We will now call on Dr. Wayne Pollock to announce the membership of the Committee on Committees.

REPORT OF THE COMMITTEE ON COMMITTEES

Dr. Wayne Pollock: Mr. Speaker and Delegates: The Council wishes to nominate for your approval the following men for membership on the Standing Committees:

The Committee on Associated Societies and Technical Groups, Dr. James Regan, Los Angeles, replacing Dr. J. Norman O'Neill.

The Committee on Histories and Obituaries, Dr. John Barrow, Los Angeles, replacing Dr. E. T. Remmen.

The Committee on Industrial Practice, Dr. Packard Thurber, Sr., of Los Angeles, replacing Dr. Jerome Schilling.

Committees on Hospitals, Dispensaries and Clinics, Dr. Howard C. Miles, Salinas, to be reappointed.

The Committee on Medical Defense, Dr. Clifford Loos, of Los Angeles, to succeed himself. Dr. Alfred Wilcox, Santa Barbara, to replace Dr. Otto P. Diederich, resigned.

The Committee on Medical Economics, Dr. Roy Ower of San Diego, replacing Dr. Arthur Kirchner.

The Committee on Medical Education and Medical Institutions, Dr. Walter MacPherson, Los Angeles, replacing Dr. Frances Smyth.

The Committee on Military Affairs and Civil Defense, Dr. Frank F. Schade, Los Angeles, to be reappointed. Dr. John Ruddock to be appointed consultant.

Committee on Postgraduate Activities, Dr. Herbert Jenkins, Sacramento, replacing Dr. Carroll Andrews. Dr. Thomas Collins, Fresno, replacing Dr. John Ball, deceased.

Committee on Public Policy and Legislation. Dr. James Doyle, Beverly Hills, replacing Dr. Peter Blong.

Committee on Scientific Work, Dr. George Houck of Palo Alto, replacing Dr. Clayton Mote.

Physicians' Benevolence Committee, Dr. Elizabeth Mason Hohl, Los Angeles, to be reappointed.

Mr. Speaker, I move the appointment of these committees as indicated.

SPEAKER CHARNOCK: Is there a second?

DR. WILBUR BAILEY: I second the motion.

SPEAKER CHARNOCK: It has been moved and seconded that we elect these as indicated by Dr. Pollock. All those in favor signify by saying "aye." Contrary? They are appointed.

SPEAKER CHARNOCK: At this time C.P.S. is ready to go into conclave.

DR. E. VINCENT ASKEY: May I make one announcement at this time before we go? It is very important that your Delegates and Alternates to the A.M.A. House of Delegates meet and consider any requests that you people may give us to the end of this meeting. We are waiting and have not had our yearly meeting because we don't know what you fellows want us to do yet. I hereby call all Delegates to the American Medical Association and all Alternates to meet at 10:00 o'clock tomorrow morning in Room 7204. Thank you, Mr. Speaker.

SPEAKER CHARNOCK: Dr. Donald Cass has asked permission to discuss a matter before you at this time. If there are no objections, we will allow him to do so.

DR. DONALD CASS: The matter that I have to discuss has nothing to do with C.M.A. except indirectly. I have been requested to explain the national election for President, and who is voting for who and what. On the Republican ticket, you have two choices, Mr. Warren and Mr. Werdel. On the Democratic ticket you have two choices, Mr. Kefauver and Mr. Brown.

In California the law requires that you vote for an individual for President, not for a national delegate. There are seventy delegates on the Republican group, and I think a few more on the Democratic side. When you vote for one of these names, you vote for the entire delegation that is pledged to them. That is, if you're a registered Republican, you can vote Republican, but not Democratic, in the primary. You can vote Democratic if you are a registered Democrat.

Now the thing that I have been asked to explain is the difference in who can vote for who and what are you going to get when you vote. There are on both parties two types of candidates for Republican delegates, and on the Democratic, two different kinds.

We have on the Republican side what is known as a captive delegation, a delegation pledged to Mr. Warren, who will follow Mr. Warren and Mr. Warren will vote the seventy votes of those national delegates. A vote for Mr. Warren means that he will carry those seventy California delegates in his pocket until he gets ready to let them go. He has said he will release them when he is sure that he can't win himself.

Mr. Werdel is not running for office. Mr. Werdel is just a name. If you vote for Mr. Werdel, you vote for seventy Republican delegates who will be released and won't have to vote for Mr. Werdel or anybody but the man of their choosing. They can vote for Mr. Taft, Mr. Eisenhower, General MacArthur or Mr. Stassen; anybody they want. They will not be pledged to any one man and each delegate will be free.

On the Democratic side, a vote for Mr. Kefauver will mean that the Democratic delegates have the delegates to the Democratic National Convention and they will be Mr. Kefauver's votes. He can handle them any way he wants and keep them in his pocket, but he will vote the entire ticket. If you vote for Mr. Brown, it's similar to the vote for Mr. Werdel. That is, Mr. Brown is not running for office. He will release his candidate or his delegates as soon as they are elected, if they are elected.

Now that has been a confusing thing in the minds of many because in California you can't pick delegates apart from Mr. Warren's group, apart from Mr. Werdel's group. If you are a Republican you can't take part of Kefauver's and part of Brown's. You have either got to vote Warren, Kefauver, Brown, Werdel. Each of those names carries with it the delegates to the national convention where that presidential candidate is nominated for that important party. I am giving you this information because I'm currently on one of these groups, and I have been asked to explain because so many people don't know how they're going to vote. If they want to vote for a certain candidate, I'll say again, the Warren candidates are what we call captive candidates. They are pledged to vote what Mr. Warren tells them to vote until he frees them and he has not said when he is going to free them. Mr. Werdel has an affidavit on file that his delegates will not be forced to vote for him. They're Republican candidates and will be free to vote for any man they want for the nomination.

Mr. Kefauver's group are pledged to him and Mr. Kefauver will vote the Democratic delegates as a bloc. That is, as long as he wants to hold them. Mr. Brown has the same number of delegates. If they are elected, they will vote individually. I'm sorry to take your time but I was requested to announce this and I hope it is clear to you.

SPEAKER CHARNOCK: Both political parties are represented in that discussion. I'm sure we can accept this report.

Coming back to Number 6, there are two places on the C.M.A.-C.P.S. Liaison Committee. Are there any nominations for those two offices?

A DELEGATE: Who is to be replaced?

VICE-SPEAKER CHARNOCK: The Secretary won't tell me. The President and the President-Elect.

We have a word from Legal Counsel, Mr. Hassard.

MR. HASSARD: The resolution of this House that created this liaison committee specified that there should be two members on the committee elected by the House of Delegates. In addition to which the President, President-Elect and several other officers are also on the committee: the two to be elected by the House have never been selected so you're not replacing anyone.

Dr. Sidney J. Shipman: I would like to propose the names of Dr. Heron of San Francisco and Dr. Morrison. The reason for this proposal is that subsequently you will have before you a new proposal which was made the day before yesterday, to include three members of the Council on the Board of Trustees of C.P.S. and since that has been the case or probably will be the case, I would suggest that in order to fulfill the requirements of procedure, we nominate Dr. Heron and Dr. Morrison.

Speaker Charnock: Are there any further nominations? The Chair hearing none, declares the nominations closed. Those in favor of Dr. Heron and Dr. Morrison, the selection of two members of C.M.A.-C.P.S. Liaison Committee, signify by saying "aye." Those to the contrary? They are elected.

Speaker Charnock: With the permission of the House, we will declare a ten-minute recess.

. . . Recess. . . .

Speaker Charnock: Back to C.M.A. While we are still in recess as the House of Delegates, and before we go back into session as a House of Delegates, with your permission I should like to have at this time one of our young A.M.A. Junior Delegates speak to you for just a few minutes. If there is no objection, and the Chair hearing none, we should like to have Frederick Sobeck, third year man at the University of California at San Francisco, give you just a short report about the working of the Student A.M.A.

Frederick Sobeck, Student A.M.A.: First of all we have the Student A.M.A. I would like to thank you all for the splendid support you have given us. In our chapter we have been given help in getting organized from several of the Bay Area county societies of $25 and $50. Now that we are organized we hope we will not have to receive any more financial aid in this regard. Naturally, we hope to be as financially and otherwise independent as we are able.

We also thank you for your help in sending one of our student delegates to our National Student A.M.A. Convention; one delegate from each of our schools. Also, two delegates were sent to this convention from our chapter up at the University of California. There are no delegates from the other schools in this city because we have vacations, but they do not this day. Unfortunately, the sending of these delegates is a matter in which we cannot become financially independent, and we will have to rely upon your added and continued support if we are to continue to do this.

We had a national convention between semesters this last year in Chicago. There were delegates present from thirty-five medical schools. One of the outstanding pieces of business transacted at this meeting was an agreement to work with the N.I.C.I., the National Interassociation Committee on Internships which devised and runs the internship matching program by which interns are selected for their appropriate hospitals. It was agreed that Executive Council of the Student A.M.A. should meet with the N.I.C.I. and devise a questionnaire to send all the present seniors to find their opinion of the matching plan as they experienced it and to meet again with the N.I.C.I., and as a result of this poll, as a result of their discussions, to change, drop or continue the matching program.

Also at the national convention the first Student Journal was brought out. There have been four copies of this journal for the four months of this year so far. I feel that this is an excellent journal and all the students I have talked to feel it is very excellent. I have the four copies with me here today if any of you are interested in seeing them. I hope you will call me aside and take a look at it.

On a local level our projects have been somewhat different. On talking to the delegate from U.S.C. I find that his particular program has been largely arranging for meetings and speakers with subjects pertaining to inquiry into the sectional and economic aspects of medical problems; problems such as choosing an internship, medical students, and finally to practicing doctors, to choice of locations and so on.

Another thing we are investigating in these talks is the humanity of medical practice as opposed to the science of medical practice. Often we as students feel that we have so much time spent in learning the facts of medicine that very little time is left over in school for learning the more human aspects.

At our chapter at U.C. we have just organized as well as the Student A.M.A., a study body government which previously had not existed. Therefore, we had considerable backlog of very practical measures that we had to attend to and this has been our predominant sphere of activity.

One of the things that we have done this year is to organize an orientation program with incoming classes. In the past, the first experience the freshman had upon entering the school was a headlong plunge into histology lectures at 8:00 o'clock Monday the first day. We are trying and have succeeded in getting hold of the freshman class during registration week before they are spoken to by any of the faculty and give them a student's or worm's eye view of what medical school is like, what we think about, and what we have experienced; giving them ideas of what they will find helpful to do and helpful not to do, who and what to look out for, and all sorts of things.

We have also instituted an orientation program for each class at the beginning of their year by the class one year ahead of them along a similar vein. We also offer advice on purchases to the student so that he may get his full money's worth and make the purchases which he will use the most and avoid making purchases which he can get along without if he does not wish to buy it if he can help it. We have also made efforts to purchase equipment and books wholesale. and in this all the distributors and manufacturers have given us all the cooperation they can except they refuse to give us a break. They are willing to do anything they can for us except help us.

Last year we had succeeded in acquiring from one of the local distributors a discount so that instead of taking the full profit as usual, he would take a smaller profit and give us I believe at that time a 15 per cent discount. Somehow the word got around and the manufacturers in turn sent letters to all the West Coast distributors informing them if anyone sold to students at less than the full price, they could get no more products to sell. This year we have again tried and are still working.

One of our biggest projects, and I hope our most successful this year, has been a frontal attack on the problem of student-faculty relationships. It seemed to us there is an unnecessary gap between the student and the faculty and this gap has existed merely because no one has taken a particular effort to eliminate it. To work on this program, we called a large meeting of the students and faculty, and twelve faculty members representing all departments of the university were present and about fifty student members were present and we had a large round table discussion, and I think that it was very successful.

As an example of some of the things that we discussed, Dr. Bell, who is head of surgery, after we had presented some of the things that were bothering us, told us when he was student he had the same problems, and he was president of his class and so he not only had the problems, but had to try and do something about them and took them to the faculty; and the same problems still existed. On the one hand it was very encouraging to find the faculty so interested in our problems, and again discouraging in that they had had the same problems for twenty or thirty or forty years and here we were trying to eliminate them once again.

As an offshoot of this program, one policy we have established which we hope will become permanent, and that is working with the various departments on a curriculum evaluation program by the students. This has been encouraged by the departments, because they feel the students have many excellent ideas to give them. Perhaps we don't know what we should be taught in bacteriology, but I think we can point out that perhaps in a lecture in orthopedics dealing with fractures of the hand and fingers, when they show an x-ray on the viewer, it was difficult to see a fracture when you're standing right in front of the x-ray but in the fifth row, thirty feet away, you cannot even be sure it is a hand you're looking at, and they might do well to make a slide and magnify the situation.

There are some things we are working on that we still have not succeeded in and we would like to enlist your support and cooperation if possible. One is an internship information program. At present, we know as students very little about internships, except right here in California. We have devised a questionnaire with many pertinent questions which can be easily answered by interns, which we are sending out to all graduates who are now interning, and hope this information will come back and we will have a permanent file on all hospitals in which we have interns. This file will keep on growing year after year. Since this is the first year it is a small file, and if any of you have any contact with any hospitals who have interns, but no California graduates as interns, if you would get in touch with our organization, we will send you some of our questionnaires for your interns to fill out and send to us for our use. If you could do this, we would appreciate it very much.

Another program we are working on is to establish a student emergency fund which would be contributed to by students and by students as they go on and become doctors contributing back into it. The purpose of this program is so that students who find themselves in financial dire straits can draw upon this student fund which is a student-sponsored and administered fund. They would feel more free to draw upon this fund than upon a loan fund or a scholarship fund, and this would further increase the ties we feel between students and alumni.

Another program we are working on is to try to secure hospitalization insurance for students and students' families. We are in a very peculiar situation. Students are covered as far as hospitalization while they're in college, but while they are at home during the summer or between semesters, they are not covered at all. Someone goes skiing between semesters and breaks his leg and comes back and they say, "Who are you?" Also, it is impossible to get coverage for students' children. Half of our class are married. We cannot get coverage for the children and it means the entire family is not covered. Naturally, the student himself does not have a desire to have duplicate coverage while in school.

We have seen every medical insurance firm we could and every one has told us that there is no such policy which will cover a student for four months out of the year or will cover his children while he himself is not covered. I have been talking to many people here at this gathering to find out if such a plan could be worked through C.P.S. I have found varied reactions. This would be a special type of policy. In the very excellent report on C.P.S. which was given Sunday it was mentioned they should try to do away with as many special policies as possible and get down to a basic few. I have heard comments ranging from "It's a wonderful idea," on the one hand to "Such a policy does not exist and simply cannot exist. It is out of the question. I'm sorry."

If any of you have any ideas how you can help us on this, we would certainly appreciate it.

In short, all these programs perhaps sound small time to you. I assure you that to the students who are knee deep in a concentrated medical curriculum, these problems look very large and we are certainly looking for solutions. If any of you have any ideas about anything we're doing, I hope you will get in touch with me anywhere around here or George Hurwitz, the other Student Delegate, and find out anything that we can tell you. Thank you very much. (Applause.)

Speaker Charnock: Thank you, Mr. Frederick Sobeck, for bringing us the problems of the students at our medical schools. I am sure this is a real problem and I hope we can help you.

Ladies and gentlemen, it is now 4:35. Do you wish to keep grinding along?

Dr. E. Vincent Askey: Ladies and gentlemen, this is brought up in the recess for the following purpose. I spoke to your Speaker and Vice-Speaker in regard to, as you know, the sections of our Association do not meet until after the first House of Delegates meeting has met, and therefore any resolutions they might wish to bring in as a section do not have any opportunity to be brought in except as an emergency. The Section on Pathology passed a resolution which they brought to me as chairman of your American Medical Association delegation, and they wish it taken from this House to the American Medical Association, and since the American Medical Association will meet in June, unless it is considered as an emergency, it will not be considered until after the time for which it is intended will have passed. It has to do with some new certification of microbiologists or something of that sort, and the Board of Pathology has stated they will have no action until October. By October, however, the C.M.A. will not have met again, and unless you wish to consider it as a resolution of emergency, it will have no hearing.

I have asked the consent of the Speaker, and I ask the consent of the House at this recess time for Dr. Tragerman, the president of the Section on Pathology, to read the resolution to you in your regular session whether it should be an emergency or not. With the permission of the Speaker and the House, sir, I would ask Dr. Tragerman, the chairman of the Section on Pathology, to present this to you, sir.

Speaker Charnock: Are there any objections? Dr. Tragerman, will you proceed?

Dr. Leon John Tragerman (Los Angeles County): Thank you for your indulgence in permitting me to present a resolution which was passed just yesterday by our section. I feel that time was of the essence in this instance, and that it is a matter of importance not only to the members of our section, but to the medical profession at large.

The following resolution was passed by the Section of Pathology and Bacteriology, C.M.A., at our meeting yesterday:

Whereas, An application is presently being processed with the intent of obtaining American Medical Association approval of a Medical Specialty Board in Microbiology which would certify non-physicians as diplomates in the field of medical practice; and

Whereas, There is already in existence an American Board of Pathology which can provide certification of properly qualified physicians in the field of medical microbiology; now, therefore, be it

Resolved, That the Section on Pathology and Bacteriology of the California Medical Association affirm its approval of the previously established essentials for the improved examining boards and medical specialties including the principles that the applicant for examination for regular certification must be a graduate of a medical school approved by the Council on Medical Education and Hospitals and must be licensed to practice medicine, and that the members of any medical specialty board be graduates of a medical school approved by the Council on Medical Education and Hospitals and that the Council on Medical Education and Hospitals of the American Medical Association limit its approval of special boards to those which can comply with the essentials in order to safeguard the interests and welfare of patients; and be it further

Resolved, That the Section on Pathology and Bacteriology of the California Medical Association offer this resolution to the House of Delegates of the California Medical Association with the request that they adopt a similar resolution and transmit it to the House of Delegates of the American Medical Association. Thank you.

Speaker Charnock: Thank you, Dr. Tragerman. This is one to be considered as new business, and introduced into the House as new business at the appropriate time and it can be voted upon as an emergency as you wish. We are not in session at the present time and it cannot be acted upon at this time, but I will give you the opportunity, Dr. Tragerman, to express your feelings about this.

Again, it is now 4:40. Would you like to stay in session and get some of the reference committees out of the way? Unless there is any objection, it is the consensus of opinion we are going at the work.

I am going to call first, with your permission, on reference committee No. 4 which is the committee which has to do with resolutions on the constitution and by-laws.

REPORT OF REFERENCE COMMITTEE
No. 4

Dr. Arthur A. Kirchner: Mr. Chairman and members of the House: You will see that our report is being presented to you in two parts. The reason for it is this. At first, it was thought that the report of the committee would have to be oral because of the time limitations, but fortunately about an hour ago, they were able to bring us forth the report of the committee on the various amendments offered. As a consequence, there will be found an error or two and they will be called to your attention as we proceed.

Your reference committee No. 4, consisting of Dr. Wayne P. McKee, Dr. Albert G. Miller and myself, has held hearings on the proposed amendments to the constitution and by-laws and are prepared to recommend as follows: I can assure you this committee which knew very little about the constitution and the by-laws forty-eight hours ago, has had a considerable enlightenment in this regard since that time. So I would like to refer you to your copy of the proposed amendments to the by-laws and the constitution, and I would like therefore to consider amendment No. 1, submitted by Dr. Shipman.

SPEAKER CHARNOCK: Just for the record, I would like to declare the House is now in order. Proceed.

DR. KIRCHNER: Submitted by Dr. Shipman:

This refers to dues of retired members. The amendment adds the words "and who have paid dues for the current or immediately preceding year," to Paragraph (a) which then reads as follows: The Council, on recommendation of any component society, may grant retired membership to those active members who have ceased the practice of medicine to the extent and for reasons satisfactory to such component society and the Council, who have been active members of the Association for a total of ten years prior thereto, and who have paid dues for the current or immediately preceding year.

The remainder of Paragraph (a) shall be unchanged.

This amendment would correct an oversight in the present by-laws and would provide for honorable retirement for those members who may have been disabled by a seemingly temporary disability which later became permanent.

I move the adoption of this resolution.

DR. WILBUR BAILEY: I second the motion.

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this report. Bear in mind this requires a two-thirds vote. Those in favor of the adoption of this section of the report will signify by saying "aye." Contrary? It is passed.

DR. KIRCHNER: We will now go to amendment No. 2 which has been broken down into a number of subdivisions. It was submitted by Dr. Lyle G. Craig for reference committee No. 3. This came from the Interim Session of December, 1951:

Resolved, That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 1, the first sentence be amended by deleting the word "regular" and inserting in its stead the word "Annual," so that this first sentence shall read:

"At each Annual Session the House of Delegates shall, by a majority vote, fix the annual dues to be paid by members of the Association for the ensuing calendar year."

The remainder of section 1 shall be unchanged.

This refers to annual dues. The amendment deletes the word "regular" and inserts in its stead the word "annual," so that the first sentence of this section shall read: "At each Annual Session the House of Delegates shall, by a majority vote, fix the annual dues to be paid by members of the Association for the ensuing calendar year."

This is a constitutional amendment which cannot be acted upon at this time.

SPEAKER CHARNOCK: Hearing this, this is to lie upon the table. The Chair instructs that this constitutional amendment is to lie upon the table.

DR. KIRCHNER: At this time we would like to refer you to 2 (c). There has been a misarrangement of the amendments, and for this reason we would like to consider 2 (c) before considering 2 (a). The intent of paragraph (a) is to eliminate the Interim Session and substitute the word "one regular session" for the words "two regular sessions," to read as follows:

"In each year there shall be one regular session of the House of Delegates, the time and place of such session to be fixed by the Council as far as possible in advance, and notice thereof published in the Journal of the Association. This session shall ordinarily be held within the first six months of the calendar year, and shall be designated the Annual Session."

This amendment also deletes paragraph (b) of the by-laws and substitutes an amended paragraph (b) delineating the mechanism for calling special sessions as follows:

"In addition to the Annual Session, special sessions of the House of Delegates may be called by a two-thirds vote of all the members of the Council at any regular or special meeting of the Council; or may be called by a written request stating the object of the session, and filed with the Secretary in the office of the Association. Upon receipt of such a call by the Secretary, the Council shall within thirty (30) days thereafter fix the time and place for such session, and shall cause written notice thereof, stating the purpose of the session, to be sent by United States mail to each member of the House of Delegates at his office or place of residence, as shown by the records in the Secretary's office, at least fifteen (15) days prior to the date of the meeting. At any such Special Session the House may consider and act upon all matters stated in the call, and may in addition recall from committee for action by House any resolutions, By-Law Amendments, or other matters not excluded by the Constitution, which have been referred to a Reference Committee or Special Committee at a prior session. In this event, the House may waive the requirement of these By-Laws that such committees shall have submitted a written report thirty (30) days in advance of the session."

This amendment offers the following paragraphs (c) and (d) as substitutes for paragraph (c) of the by-laws. The substitute paragraph (c) reads as follows:

"Resolutions, or other new business, shall be introduced at the first meeting of any session, and shall be referred by the Speaker to the proper reference committee, which committee shall make a written report with recommendations to the House of Delegates at a subsequent meeting of the same session, held after an interval of not less than twenty-four (24) hours. Such committee report may be acted upon by the House either as a whole or by sections, and each section may either be given final action, returned to the reference committee for further study until the next regular or special session, or may be referred to a special committee, appointed by the Speaker, for such further consideration."

The committee wishes to add the words "for that session" to the last sentence of paragraph (d) which will then read as follows:

"The passage of such emergency resolution shall require a two-thirds affrmative vote of all members present and voting, and the action shall be final for that session."

This amendment eliminates the mandatory interim session of the House of Delegates and leaves the privilege of calling such a meeting in the hands of the House of Delegates and the Council.

After much deliberation by the committee and after ascertaining the opinions of many members of the House of Delegates, the committee feels that the holding of an interim session on a mandatory basis is inadvisable and therefore recommends that the amendment do pass.

Dr. E. Vincent Askey: I second the motion.

Speaker Charnock: It has been moved and seconded we adopt this section of the report. Is there any discussion?

Dr. Beltz (Los Angeles County): I was going to ask the question, should the word "present" be in line 5, paragraph 2, on page 2 following the word "Council," so it would read "may be called by a two-thirds vote of all members of the Council present at any regular or special meeting"? The way it reads, it seems to me it requires all the members to be present.

Mr. Hassard: As worded in the amendment before you it means the two-thirds of all of the members of the Council would have to vote for calling a special session; not two-thirds of those present at a meeting, but it wouldn't require all members of the Council be present if two-thirds were present and it's unanimous, they'd be able to call a meeting.

Dr. Lyle Craig (Los Angeles): That wording is exactly in the method of calling a special session, is exactly word for word as it is in the present by-laws with one single exception; that after putting it in four times, postage fully prepaid, I decided that was redundant and couldn't take it, so I left that out, but as far as the requiring the majority, two-thirds of the entire membership of the Council, that is exactly word for word as it is in the present method.

Dr. Robertson Ward: Mr. Speaker, I hate to get up and put on another argument for the interim session. I think it was a wise provision of the new constitution and by-laws, and I hate to see it voted down before it has been given at least a year's chance to see how it works out. If you vote in favor of the recommendations of the committee, you vote out of existence the interim session. I know that my own delegation has kicked this thing around a good deal, and the majority of us felt that we should eliminate the interim session.

I make a plea to you not to eliminate it at this time. At least give it one year's time to see if its provisions were not correct such as are now in existence in A.M.A. This is a pretty big organization, and it seems to me that we should give more time to the consideration of our legislative matters than is being given or is willing to be given in a single session.

Dr. John M. Rumsey (San Diego): We of San Diego come instructed to keep the interim session if we can and these are the reasons why we felt that way. I think it is evident that everyone in this House understands the problems that are presented in these resolutions very much better than at any time that we have observed in the House of Delegates, and that is primarily because of the education in the interim session. The understanding eliminates a lot of dog fights and eliminates a lot of time wasted. I plead for you to keep it.

Dr. Leslie Magoon: I have talked to this subject before, but I beg your indulgence for talking to it again. Primarily the purpose of the interim session was to increase the stature of the House of Delegates. If you remember back to when the resolution was adopted directing that the new constitution and by-laws be drawn up, it was for that specific purpose. If the House is for a larger stature, it must then have more offered. That's the first reason that I feel an interim session is valuable and should be kept. But a more important reason, a more fundamentally important reason and a more important benefit of the interim session is the greater participation it gives our membership in the decisions that we here make. How did it work when we had one session? Our delegates met and organized. They met with our Council and asked our councilors "How will you instruct us?" The councilors in turn said, "Well, what's coming up?" The delegates were obliged to say they didn't know.

Our constitution so instructs delegates on important things. Before they had no chance. When the delegates came back, having done something, the only recourse the individual member had was to rail at the meatheads that did things like that to him.

Now what happens to the resolutions that are in our hands? The member has a chance to tell his delegation what to do. The member feels that he's a part of the deliberations and that he helped make the decision and it is only thus that a decision is cheerfully accepted and really valid.

For those benefits and with Dr. Ward, because the time of the experiment has been much too short, I ask that this proposal to eliminate the interim session be defeated.

Dr. H. Clifford Loos: As Dr. Rumsey of San Diego said, their delegation is for the continuance of the interim session. Our delegates and alternates had a caucus the other night. It was put to a vote as to what they wanted and there were about five people who wanted to continue the interim session. So I think I am correct in stating that the Los Angeles delegation is not in favor of continuing the interim session.

The objections that I have to it are principally that it's a burden, that there is not enough interest in the people who are the delegates to warrant the existence of such a thing. I wish every one of the delegates had the interest Dr. Magoon has. We'd have a House of Delegates then that wouldn't need to be instructed. They'd keep instructed. But I believe it is a burden and if it was continued as a trial and error matter for a few years, you'll find that the attendance at the interim session will be very light. I oppose very much the continuance of the interim session.

SPEAKER CHARNOCK: Are there any others?

DR. O. R. MYERS (Humboldt County): I think our delegation has come the farthest of anyone and I have been coming for a good many years. In regard to the interim session, twelve months is a long period of time. There is a great deal of business transacted and it is becoming mandatory that this convention is gathering magnitude each year, so that during that period of twelve months we go back, we are busy, we don't read all of the reports that may be sent to us, and by a period of twelve months, we have forgotten a great deal of what was of vital importance and transacted at the last annual session.

By the interim session, a period of only six months, we keep up to date on it and we are informed of many of the things which should come before the House of Delegates. This last year the December meeting, I am sure, was an educational thing for many of us. We were able to take back to our county societies certain actions on the part of the House of Delegates, and then became better prepared on the annual session than we would have been had we not had that session in order to give us that information. I would like to see the interim session continued, and for a further reason if nothing else, I believe there is a large number of these delegates who would like to participate or at least see some and visit some of the scientific sections. As it is at the present time, most of the time is taken up at the House of Delegates. We sit here for long periods of time and probably not the best action is taken frequently on some very important resolutions on the part of the House of Delegates, because we've become fatigued mentally as well as physically. So our delegates in our county feel that we do like to see an interim session continued.

SPEAKER CHARNOCK: Are there any other discussants on this issue?

DR. ROBERT A. SCARBOROUGH (San Francisco): I would just like to bring out one practical point in favor of elimination of this interim session. The San Francisco delegation has met on several occasions to consider resolutions to be entered before this House, and after considerable debate and discussion, submitted four resolutions that will be presented later for action. The delegation furthermore, in meeting yesterday, decided that if the interim session were continued, the delegation would request that each and every one of those resolutions be considered as an emergency. I'm sure other delegations who have entered resolutions will feel the same way, and if we consider every resolution as an emergency and accept it as an emergency, we will have accomplished at this meeting all the work that might have to be done in December. Thank you.

DR. BURT DAVIS (Santa Clara): In the existing by-laws and constitution, there is an added burden put upon anyone who wishes to make his resolutions as an emergency. If you wish to take the chance of having to buck the difficulties of getting a two-to-one vote on your resolution, then you can make it an emergency, and if the San Francisco delegation feels that by making them emergencies that they will take care of the resolutions at the present time, they will at the same time be putting a very strong block in the way of their own resolutions. I doubt if there is a single one of us who the first time he performed a procedure upon the patient, did the best job he thought was possible. I think that by putting in this by-law change and constitutional change, we are condemning and we are removing a very valuable adjunct to our society, and I would make a plea personally and for many for whom I speak that this be continued at least a year or two until we have had an opportunity to find out whether or not the matter is of value.

DR. HALLEY (Fresno): I served on reference committee No. 3 last interim session and subsequently and I haven't much that I can add to the things that have been said against it. However, we made a plea and it was public knowledge that anybody could correspond with reference committee No. 3 and give their views on this and that resolution, whichever interested them the most. I think in that length of time there were only three people that corresponded with us, and one of them was more or less by invitation to answer the problems represented in one of his resolutions. We are met to death. We have meetings for everything, so many meetings that a doctor goes home so weary every night he can hardly get back the next day, and while that may not concern us all at this particular moment, it makes the willingness of a man to serve as a delegate a lot less when you ask him to meet twice a year. You know when you are on one of these committees or when you come as a delegate without any further function to perform than to vote, you're going to have half the resolutions do not pass. It just seems like somebody is bound to get busy and spend a lot of time and make a lot of resolutions that haven't a great deal of merit. It does give a chance for a lot of this type of resolutions. I think the most important thing I have to say about the meeting last December was that it was apathetic in attendance and interest. We as a committee had no correspondence with you as delegates, and the things weren't particularly important to you until now. I think the biggest problem of it all is to get men who are willing to come here and also accept positions in the county societies and hospital staffs. I just think we're met to death. (Applause.)

DR. JOHN CLINE: I do not wish to speak strictly on this resolution. I was not present at the interim session last year and therefore I do not feel competent to really evaluate it, but I can tell you in the American Medical Association there is an increasing criticism of two sessions a year and it seems likely that the interim session of the American Medical Association will be eliminated within the next two or three years. (Applause.)

DR. LEON P. FOX (Santa Clara): Some of us do not realize it, but this association is multiplying yearly. It's obviously physically impossible for us to consider all the business that is presented at these meetings in one session. Also, some of us would like to attend some of the scientific meetings of this organization, which of course at one session where we have business that is doubled to consider and conference meetings and also all sorts of other types of meetings, politically as well as administrative to consider, it is impossible for us to attend any scientific meetings. The very fact that this meeting has been carried on so orderly and we have been able to consider the business so thoroughly seems to me enough to urge us to continue the interim session, at least for a fair trial.

Speaker Charnock: It requires a two-thirds affirmative. Those in favor of this—

Dr. Leslie Magoon: Should the vote not be taken on the proposed amendment to avoid confusion rather than on the report?

Speaker Charnock: Those in favor of this section of the report which will eliminate the interim session will please stand. . . . Those opposed will please stand. This section of the report has failed of election, failed to pass.

Dr. Arthur Kirchner: At this time we'd like to consider an amendment, 2 (a), Chapter V, Section 7 of the By-Laws.

This refers to resolutions or other new business. This amendment clarifies the situation as to the time for introducing resolutions or other new business, since there are no written restrictions in the constitution or by-laws at the present time. At the same time, it will provide for the admission and consideration of real emergencies at any time. The committee desires to add the words "for that session" to the last sentence of subparagraph (d) of this amendment, which will then read as follows:

"The passage of such emergency resolution shall require a two-thirds affirmative vote of all members present and voting, and the action shall be final for that session."

The remainder of subparagraph (d) of this amendment shall be unchanged.

We recommend this amendment, as amended by your committee, do pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any debate?

Dr. Lyle Craig: I would just like to explain the reason for this being as it is. Of course this resolution and amendment was obviously inserted to cover these two paragraphs. If the other one was lost, which we anticipated might very easily happen and did, the committee found by experience that at the very satisfactory hearings during the time of the convention, men would come and talk about resolutions and that we would form rather considered opinions before we left the convention; but after we got home we didn't get much help. So it is obviously better to have the resolutions before the House and referred to the committee at the first meeting of the session so that the committee hearings will be of some value. Then inasmuch as there is a Chapter V, Section 9 of the constitution that provides that reports of committees—work reports—will continue, there must be some things reported to the committee. This will give you the privilege of acting upon resolutions or referring them back to the committee as you please. So we provided for the referring them back to committee or giving them to a special committee appointed by the Speaker.

Then the last paragraph of (d) is to make emergency resolutions go over a couple of hurdles if anybody wants to, as the San Francisco delegation wants to make all its resolutions emergency, so they do have to be acted upon. They have to get by the hurdle of a two-thirds vote to get them admitted. You remember at the last session in December we had two resolutions introduced as emergencies, voted down as emergencies and put in the hopper as routine, one of which was introduced in the last five minutes of the closing session. We felt that if a condition is a real emergency and delegates want to introduce a resolution as an emergency, they ought to be willing to let it go over these hurdles and not make it an emergency when it is not.

If you do that and let anybody introduce anything at any time and call it an emergency, it is voted on as an emergency, but not a routine resolution in the last five minutes. I wanted to explain why the thing is outlined in that way.

Speaker Charnock: Is there any further discussion?

Dr. Leslie Magoon: I am going to make one point because I think by adding those three words, the reference committee has to some extent defeated Dr. Craig's purpose. It is final for that session, but might come up again and be carried over to another session. The question occurred to me that those three words have not lain on the table for twenty-four hours; is the amendment in order?

Speaker Charnock: I don't get your point.

Dr. Leslie Magoon: Can a by-law amendment be amended by the committee without referring it to the table for twenty-four hours as a new proposal?

Speaker Charnock: I will ask legal counsel.

Mr. Hassard: The same point presented by Dr. Magoon was asked of me by the reference committee. I stated to the reference committee that in my opinion the word "final" only bound the House that adopted the resolution. It could not be binding upon another House meeting at a future time, and that therefore the word "final" actually meant final for that session. Therefore, the addition of the words "for that session" is only a clarification, not a change in substance of the amendment that was on the table for twenty-four hours.

Speaker Charnock: Does that satisfy you?

Dr. Magoon: Yes.

Speaker Charnock: Are there any further questions? Any further discussion? Those in favor of this section of the report signify by saying "aye." Those to the contrary? It is passed.

Dr. Arthur Kirchner: Now we proceed with 2 (b), Article IV, Section 5 of the constitution.

This refers to the annual budget and expenditures. This amendment substitutes the word "regular" and inserts the word "annual" in its stead, so that the first sentence shall read as follows:

"At each Annual Session of the House of Delegates the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year."

The remainder of Section 5 shall be unchanged.

This is a constitutional amendment which cannot be acted upon at this time.

Speaker Charnock: We will proceed to lay it upon the table.

Dr. Arthur Kirchner: We now go to amendment No. 3, submitted by Dr. Gibbons of San Francisco amending Chapter 5, Section 3 of the by-laws:

This refers to limitations on seating of delegates. The committee feels that the secretary of the Association should not have the power to select substitutes to act in place of elected delegates or alternates. Therefore, your committee recommends do not pass. This gives so much power to the secretary of the Association, it could be conceivable he could appoint a delegate from Los Angeles to serve for San Francisco. For that reason the committee recommends a do not pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we accept this section of the report. This is, remember, a do not pass will nullify the amendment. All those in favor of this section of the report will signify by saying "aye." Those to the contrary?

. . . There being no further discussion, the motion was put to a vote and carried. . . .

Dr. Arthur Kirchner: This is amendment No. 4, Chapter V, Sections 1 and 3 of the by-laws, and we would like to vote on both sections, 1 and then 3.

This refers to the seating of delegates and alternates.

Section 1 in this amendment permits any duly elected alternate to substitute for any delegate. At the end of Section 3 of the amendment, the committee wishes to add the words "unless the secretary of the Association has been given due notice of substitution at least fifteen (15) days in advance of the session," so that it will then read, "Only duly elected delegates or alternates may be seated at any session of the House of Delegates, unless the secretary of the Association has been given due notice of substitution at least fifteen (15) days in advance of the session."

The committee recommends do pass and I move the adoption of this part of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report do pass. Those in favor signify by saying "aye." Contrary? It is passed.

Dr. Kirchner: The committee believes that additional provisions should be made for the benefit of smaller county societies by permitting the seating of other members, upon due notice as representatives of such societies. Therefore we have added the provision "unless the secretary of the Association has been given due notice of substitution at least fifteen (15) days in advance of the session." While some county societies have requested a deadline as little as 24 hours prior to the session, the mechanical requirements of constituting the House of Delegates indicate that a fifteen (15) day time limit should prevail.

Your committee recommends the amendment as amended be passed.

Mr. Speaker, we move the adoption of this section of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we adopt this section of the report. Is there any discussion?

Dr. Wayne McKee (Humboldt County): I was a member of this committee, and when we discussed it we mentioned that we cut it down to five days. Now who changed it? My recollection was five days. Who changed it?

Dr. Arthur Kirchner: That's true. The recommendation originally was five days. When we consulted the administrative staff of the California Medical Association, they told us that it would be impossible to constitute a House of Delegates on the basis of a five-day substitution, and that is why that substitution has been made and I'm sorry if I did not clarify that as I should have.

Speaker Charnock: Those in favor of this section of the report as presented will signify by saying "aye." Those to the contrary? It is passed.

Dr. Kirchner: The last amendment is amendment No. 5 introduced by Dr. Dozier of Sacramento, an amendment to Chapter X, Section 2 of the by-laws.

This amendment refers to the waiver of dues for older active members of the Association who do not qualify for retirement or may not desire retired membership but whose activities are limited because of advanced age or physical disability.

Your reference committee approves of the thought of granting a waiver of dues to members coming within the scope of the proposed amendment but feels that the language of the amendment is too inflexible. At the same time the committee believes the intent of the amendment can be realized by amending other sections of the by-laws and therefore offers as substitutes the following amendments to Chapter II, Section 4; and to Chapter X, Section 2 (b) of the by-laws.

The substituted amendment to Chapter II, Section 4, would add a new subsection (e) to read as follows:

"(e) Senior Memberships. The Council on recommendation of a component society may elect to Senior Membership those active members who have reached the age of 70 years and who have paid dues to the Association for a period of 20 years and whose practice is limited because of advanced age or physical disability."

As a companion amendment, the committee recommends that Chapter X, Section 2 (b) of the bylaws be amended by adding the words, "or Senior" so that the section would read: "Honorary or Senior members shall not be required to pay any dues or assessments, annual or special."

Now I know some of you are wondering what this is all about. The original motion seemed rather technical, but it seems that some of our senior members are employed by cities. If they were to go into retired positions, they would lose their position with the city or the hospital staffs. For that reason we recommend the amendment as amended by your committee do pass.

Mr. Speaker, I move the adoption of this section of the report.

Speaker Charnock: Dr. Kirchner, we have been discussing this amendment with legal counsel, and the amendment your committee has presented has materially changed the amendment as presented by Dr. Dave Dozier, and we will rule that this change is so great that we cannot accept it. We will rule, if you still want to put this in, it will have to hold over for the interim session, and that the House may vote upon Dr. Dozier's amendment if it so desires.

Dr. Kirchner: Mr. Speaker, I think we should submit Dr. Dozier's amendment for your discussion, and I would like to read it for you:

Whereas, Necessary costs of operation have compelled national, state and county medical societies in many instances to raise annual dues to increasingly large figures, the total of which may amount to a considerable sum; and

Whereas, Many senior members of our society still in active but limited practice desire to retain regular membership in the California Medical Association rather than accept classification as retired members; and

Whereas, In a certain number of instances because of curtailed practice, et cetera, this works an undue financial hardship on these members; and

Whereas, As our Constitution and By-Laws are now written, there is at present no legal manner by which either the Council of the C.M.A. or the House of Delegates can grant pecuniary relief to these older members who from time to time seek assistance; now, therefore, be it

Resolved, That the By-Laws of the California Medical Association be amended as follows:

Chapter X—Funds, Assessments, et cetera.
Section 2.—Dues.

A third sub-section be added to read as follows:

(c) Upon proper petition, the Council shall have the right to waive all dues and assessments to any member who is known to be an honorable member of the California Medical Association and who

1. Has paid dues to the California Medical Association for a period of 35 years or more, or who

2. Has passed the age of 72 and paid dues to the California Medical Association for the preceding 20 years, or who

3. Presents satisfactory certification that he or she is at least 75 per cent disabled in the current fiscal year.

Such petition shall be in each instance accompanied by a letter of approval or endorsement by the directors of the member's local county medical society.

Your committee moves do pass, and I move the adoption of this portion of the report.

Speaker Charnock: Is there a second?

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we accept this amendment. Is there any discussion?

Dr. Wilbur Bailey: It most certainly is a good idea in general.

Dr. Leslie Magoon: I was probably going to say the same thing that Dr. Bailey said. I think both the committee and Dr. Dozier have an excellent idea. I think both of them are incompletely worked out. I think they both will find on more consideration that other sections of the by-laws will have to be modified to describe the benefits. The way it goes with Senior Membership, do they have the privilege of active members, or are they limited to any extent?

I would move therefore that Dr. Dozier's proposed amendment and the tentative report of the reference committee be referred back to the reference committee for further consideration and later report.

. . . Motion seconded. . . .

Dr. Bailey: That's right. Exactly what I had in mind.

Speaker Charnock: It has been moved and seconded that this section of the report be referred back to the reference committee for treatment. Those who are in favor of this motion signify by saying "aye." The contrary? It is so done.

Dr. Kirchner: I am sure you understand why we've had sort of an education in forty-eight hours here.

Mr. Speaker, I move the adoption of the report as a whole as amended.

. . . The motion was seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this report as amended. Those in favor signify by saying "aye." The contrary? It is passed. Thank you, Dr. Kirchner, and your committee.

Dr. Kirchner: I want to thank Drs. Miller and McKee for their helpfulness on my committee.

Speaker Charnock: It is now 5:30 Daylight Saving Time. Are you still strong? Do I hear a motion to recess?

. . . The motion was made and seconded that the House of Delegates recess. . . .

Speaker Charnock: It has been moved and seconded that we recess until 7:30. Those in favor signify by saying "aye." Those opposed? It is passed.

. . . The meeting recessed at 5:30 to reconvene at 7:30 p.m. . . .

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TUESDAY EVENING SESSION
APRIL 29, 1952

The evening session of the House of Delegates of the 81st Annual Session of the California Medical Association was held in the Music Room of the Biltmore Hotel, Los Angeles, California, Tuesday, April 29, 1952. The meeting was called to order at 7:30 p.m. by the Speaker of the House, Dr. Donald Charnock, who presided.

Speaker Charnock: Please be seated. The recess is long since terminated, and we are now constituted as a whole as a House of Delegates.

We will hear the report of reference committee No. 1.

REPORT OF REFERENCE COMMITTEE
No. 1

Dr. Douglass H. Batten: Mr. Speaker, members of the House of Delegates: First I desire to express my deep gratitude to Dr. Roland Jantzen of Redding and to Dr. James W. Moore of Ventura for their excellent cooperation and assistance in the preparation of this report. I certainly should be remiss in my duty on this committee if I did not proclaim that we as a committee are deeply indebted to the efficiency and kindly guidance of the secretary, Mrs. Rooney, in her aid to us.

Section One:

This committee has carefully reviewed the report of the general officers as printed in the Annual Reports Bulletin, with the exception of the reports of the secretary, treasurer and executive secretary which are being reviewed by reference committee No. 2. The committee wishes to commend highly the President, Dr. H. Gordon MacLean, and the President-Elect, Dr. Lewis A. Alesen, for their unceasing activities in the past year in furthering the interests of the California Medical Association, and particularly for their time-consuming and often wearisome task of visitations to the local county societies. This committee feels that the visits to the local county societies by the officers of the California Medical Association are extremely valuable in that they put the membership at large in close contact with the problems confronting organized medicine. It is the opinion of the committee that these visitations should be continued each year.

Your committee recommends approval of the reports of the general officers.

Mr. Speaker, I move the adoption of this section of the report.

Speaker Charnock: Is there a second?

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion? All those in favor signify by saying "aye." Those to the contrary? It is accepted.

Dr. Batten: Section Two:

Your committee has reviewed the report of the Council and recommends its approval. The committee further wishes to commend the Council for its untiring work on behalf of the Association during the past year.

Mr. Speaker, I move the adoption of this section of our report.

Speaker Charnock: Is there a second?

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we adopt this section of the report. Is there any discussion? Those who are in favor of this will signify by saying "aye." To the contrary? It is adopted.

Dr. Batten: Section Three:

This committee has reviewed the reports of the chairman of the Executive Committee, and the report of the president of the Trustees of the California Medical Association and recommends approval of these reports.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion? Those in favor will signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Four:

The report of Dr. Dwight L. Wilbur, Editor of California Medicine, and the report of the Editorial Board of California Medicine, Dr. Dwight L. Wilbur, chairman, have been reviewed. This committee offers its high commendation for his continued excellent work in the conduct and guidance of policy of California Medicine and in the continuing high caliber of our publication. This committee has been informed that the Council has approved the inclusion of the Section on General Practice on the Editorial Board. This committee is highly in favor of this long delayed move.

Your committee recommends the approval of the reports of the Editor and the Editorial Board.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It is moved and seconded that we adopt this section of the report. Is there any discussion? Those in favor of adopting this section of the report will signify by saying "aye." Those opposed, "no." It is accepted.

Dr. Batten: Section Five:

The committee has reviewed the reports of the District Councilors and of the Councilors-at-Large. The committee notes that in his report of the Tenth Councilor District, Dr. John W. Green has suggested that members of the Woman's Auxiliary be invited to attend the joint meetings of the county medical societies and the officers of the state association when they are held in their respective counties. It is the feeling of this committee that the work of the Auxiliary would be more effective if the members of the Auxiliary were invited to hear the comments of the state officers when they make their local visitations.

The committee notes the statement of Dr. Wayne Pollock in his Eleventh Councilor report that doubt is raised as to the necessity or desirability of the annual visits of the C.M.A. officers to the local societies. This committee feels that these local visits are of great value even though time-consuming and expensive and should be continued as heretofore.

Your committee recommends the approval of the reports with the suggestion that the annual visits be continued.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report be accepted. Is there any discussion? Those in favor of accepting this section of the report will signify by saying "aye." Those opposed, "no." It is accepted.

Dr. Batten: Section Six:

We have reviewed the report of the legal counsel and recommend its approval as far as it goes.

This committee requests that Mr. Hassard present to the House at this session a supplementary oral report concerning the legal matters on which developments have occurred since the writing of the original report which is printed in the Annual Reports Bulletin.

Speaker Charnock: The Chair will now ask Mr. Hassard, legal counsel, to supplement this report.

SUPPLEMENTAL REPORT OF LEGAL COUNSEL

Mr. Hassard: Mr. Speaker, members of the House of Delegates: At the interim session in December, I submitted a supplemental verbal report covering pending litigation in four different states on the general subject of anti-trust and prepaid medical care. The report made in December is published in California Medicine, in the February issue at pages 95 and 96, and I will not take the time of the House now to rehash that which was reported to you then, except to recall to your minds that in December, I reported on four separate cases, one in the State of Washington, one in the State of Oregon, one in Oklahoma and one in San Diego.

The one in the State of Washington was then complete, and there is nothing further to report. The decision that I reviewed for you in December was a final decision of the State Supreme Court in Washington.

The litigation in Oklahoma has not had anything occur since December that warrants further report to you at this time.

The other two, however, do warrant a further detailed report to you. First, let me cover the litigation pending in San Diego. In December I reported that that case is really two cases in one. Originally, it was an action by Complete Service Bureau and several physicians who are employed by it against the San Diego County Medical Society and a number of individual physicians for two things; one, an injunction requiring the society to admit the physicians who work for Complete Service Bureau to membership in the society, and second, for damages, both being predicated on the California anti-trust law known as the Cartwright Act.

A second and separate part of the case is the counter-suit that was filed, after the original action was commenced, by the San Diego County Medical Society, and the same physicians who were sued in the original suit, seeking a court order terminating the activities of Complete Service Bureau on the ground that it, Complete Service Bureau, was unlawfully engaged in the practice of medicine without a license. The counter-suit raises the question which we might term corporate practice of medicine. That part has been tried before the trial judge and since December, the trial judge has reached his decision in the form of a thirty-nine page written opinion. The first part of the case is that involving claimed violations of the California anti-trust laws and has not as yet been tried.

Now, returning to the judge's decision in the counter-suit, our cross complaint was presented and predicated on the premise that the Complete Service Bureau and another corporation called Group Properties, Incorporated, which is a stock corporation and which owns the physical plant in which Complete Service Bureau operates, and Mr. Parmer the layman who is the manager of the Complete Service Bureau and the majority stockholder in Group Properties, Incorporated, are unlawfully practicing medicine.

There were two questions of law involved in our countersuit. First, do physicians in private practice have the right to maintain a legal action to enjoin unlawful practice by others, and second, if so, were Complete Service, Group Properties, Incorporated, and Mr. Parmer actually engaged in the unlawful corporate practice of medicine. The first issue which goes to the question of our right to sue at all was argued three times before the trial commenced, and on all three occasions, the trial judge issued rulings in our favor. However, when he decided the case after trial, he in effect reversed himself, and in his opinion, he frequently mentions that neither the Attorney General nor the Board of Medical Examiners have ever complained about the actions of the Complete Service Bureau or Mr. Parmer, and he expresses the opinion that physicians in private practice may not sue to enjoin unlawful practice by others, but that only governmental agencies such as the Board of Medical Examiners or the Attorney General may do so. He states that in other states it is frequently held by the Supreme Courts of the various states that attorneys, physicians and dentists have a property right in their licenses, and they may protect that property right from invasion by enjoining unlawful practice. There are many, many cases on the point. I would say that more of them involve the practice of law than either medicine or dentistry, but the principle involved is the same for all three.

In California, however, there has never been a decision by our Supreme Court one way or the other as to whether you as physicians may protect your licenses against invasion by suing to enjoin unlawful practice.

On the second point, that is, were Complete Service, Group Properties, Incorporated, and Mr. Parmer unlawfully practicing medicine, the trial judge chose to follow a new era pattern. Historically, it can be described this way. Approximately a decade or so ago, articles began to appear in legal journals arguing that prepaid medical care by corporations was perfectly lawful, provided that the corporation would actually operate as a non-profit organization and without commercialization or exploitation. In the A.M.A. anti-trust cases of a decade ago, and also in one case in this state, the courts indicated that there was some merit to that contention, but in doing so, the judges stated that the type of organization that might through employment of physicians engage in the practice of medicine, were those that were actually of a benevolent or charitable or fraternal nature, and that did not solicit the general public for business.

In the San Diego action the trial judge chose to extend that idea and to say in effect, that if a corporation is in legal form non-profit, then no matter how it actually operates, it still must be considered to be non-profit in nature, and that such activity is in modern terms, lawful. He made—to my mind—the startling conclusion that it is the printed word that counts, not what you actually do. In reaching that conclusion, the trial judge also simply ignored the section of the Medical Practice Act, Section 2008 of the Business and Professions Code that expressly provides that no corporation, regardless of how it is formed and no artificial entity may engage in the practice of medicine. In reaching his conclusion, the trial judge near the end of his opinion made a comment that I believe is the key to the result that he reached that spells out his thinking, and that I believe warrants quotation to you in full because the implications in it are of terrific import to the future private practice of medicine.

Now quoting from the opinion of the trial court of San Diego:

"The reality of the whole thing, however, is that these voluntary organizations are here, they are a part of our times, and it may be as some of the witnesses think, that they are the answer to socialized medicine. Some believe that if we stopped them, we shall have to take the alternative, a system of state medicine financed through taxation. It is common knowledge and the medical profession and the courts are taking notice of the need for the type of service offered by these voluntary medical groups. Unquestionably, the distribution of these services has lagged far behind production. The enlightened attitude towards new plans of medical service is to draw a distinction between practicing medicine and merely furnishing medical services, pointing out that while a corporation as such may make contracts and collect bills, it can hardly be conceived of as performing any one of the three acts which have been defined to constitute the practice of medicine; judging the nature of disease, determining an appropriate therapy and administering therapy. With a non-profit cooperative, the commercialization which is the most feared incident of corporate practice is eliminated and the danger of dividing a physician's loyalty is scotched by the fact that the employers are the patients. Moreover, while theoretically complete freedom of choice must necessarily suffer, it is probable that a member of a health association with a panel of doctors, perhaps ten in number, has as much actual freedom of choice as the ordinary individual under the present system."

I think, and this is merely an opinion, that the judge overlooked the actual facts, that he overlooked the substance of what was being done, and that the commercialization he thought was not present is present. However, that is something that will be decided by others than me.

The point that I think is most significant is that the trial judge, realizing that he probably will be scrutinized by the Appellate Court, chose to make some new law. In his opinion he didn't undertake to say that what I just read to you has been the law in the past. He undertook to say that this is the new enlightened approach.

Again, let me say that that is a decision of the trial court. If an appeal is taken, what the Supreme Court will do with the case is something else again. Also, let me remind you again that the original suit relating to the anti-trust law has still to be tried.

Now turning to the fourth case, that is, the one that originated in Oregon, and which was an action by the United States through the Department of Justice against the Oregon State Medical Association and Oregon Physicians' Service and a flock of county societies in Oregon, and was predicated on the Sherman Anti-Trust Law. Probably most of you read in the newspapers last night and this morning that yesterday the Supreme Court of the United States, in a seven to one decision decided the case in favor of the Oregon State Medical Society and the other medical defendants. The one judge dissenting was Justice Black, and one judge, Justice Clark, did not take part in the case because he was an Attorney General at the time the action was started. Until the full opinion of the Supreme Court is available, which it will not be for a week or so here on the West Coast, it is impossible to draw any specific conclusions from the decision. All that I know at the moment is my knowledge of the facts as presented in the trial and my knowledge of the written briefs and oral argument before the United States Supreme Court and what I read in the newspapers. Putting those together, I could surmise that the United States Supreme Court held that the medical profession in undertaking its own prepayment plans is not violating the anti-trust laws, and that the medical profession in refusing as individual physicians to be forced into a service plan operated by third parties other than the physicians' own plan, is likewise not violating the Sherman Anti-Trust Act.

However, please bear in mind that is conjecture on my part at this moment because to determine actually what the reasoning of the court was to reach its conclusion, the opinion will have to be read. But at least we know that there is an instance in which the United States Supreme Court has now held in favor of medicine on the issues that are involved in these matters. Thank you. (Applause.)

Speaker Charnock: Thank you, Mr. Hassard.

Dr. Batten: Legal counsel should be commended for their excellent work they have done in safeguarding the principles upon which the private practice of medicine has been founded and their continued efforts on behalf of the California Medical Association are deeply appreciated.

Your committee recommends the approval of the report of legal counsel and the supplemental oral report as given on the floor of the House.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report be accepted. Is there any discussion? Those in favor of the acceptance signify by saying "aye." To the contrary "no." It is accepted.

Dr. Batten: Section Seven:

Your committee has reviewed the reports of the following standing and special committees: Executive Committee, Committee on Associated Societies and Technical Groups, Auditing Committee, Committee on Hospitals, Dispensaries and Clinics, Committee on Industrial Practice, Committee on Medical Defense, Committee on Medical Economics, Committee on Military Affairs and Civil Defense. Physicians' Benevolence Committee, Committee on Scientific Work, Advisory Planning Committee, C.P.S.-C.M.A. Liaison Committee and the Committee on Rural Medical Service.

Your Committee recommends approval of these reports.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we approve this section of the report. Is there any discussion? Those in favor will signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Eight:

The committee has reviewed the report of the Committee on History and Obituaries. The committee feels that the recommendations made by Dr. Powell, concerning the establishment of an active committee in each component county medical society to complete and to send to the state association secretary a reasonably complete biography of each deceased member are of great importance. Our committee recommends that the Council take appropriate steps to urge each component county society to follow this recommendation.

Our committee recommends approval of the report.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion? Those who are in favor signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Nine:

This committee has reviewed the report of the Committee on Postgraduate Activities and wishes to recommend its approval. The committee also wishes to commend Dr. Rosenow and the other members of the committee and Dr. Broaddus for their excellent work in establishing postgraduate courses throughout the state of California.

Our committee recommends the approval of this report.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Ten:

The report of the Committee on Medical Education and Medical Institutions was carefully studied. Our committee recommends the approval of this report as printed in the Annual Reports Bulletin, and recommends that Council take immediate and appropriate action concerning the problems presented in the report.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor of accepting this section of the report signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Eleven:

This reference committee recommends the approval of the oral report of Dr. Dwight Murray for the Committee on Public Policy and Legislation. The committee feels that Dr. Murray should be highly commended for his continuing efforts in behalf of organized medicine and the excellent work done by him and his committee members.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor of accepting this section of the report will signify by saying "aye." Those to the contrary? It is accepted.

Dr. Batten: Section Twelve:

This committee has reviewed the report of the Committee on Public Relations and the supplementary report given on the floor of the house. Your committee commends Mr. Clancy and his committee for the very good work they are doing in the public relations field.

Our committee recommends approval of these reports.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Thirteen:

Your committee has reviewed the report of the Cancer Commission as printed in the Annual Reports Bulletin and the supplementary report as given on the floor of the House. Your committee recommends approval of both reports.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor will signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Section Fourteen:

Your committee has reviewed the report of the C.M.A. Blood Bank Commission. We wish to congratulate the Blood Bank Commission on the fact that the lifeline of California as represented by the chain of blood banks throughout the state has now been completed. We feel that the members of the Blood Bank Commission all have done excellent work, and that in particular Dr. John B. Upton, chairman, should be congratulated and commended for the tremendous amount of time and work that he has devoted to this project.

We recommend approval of the report of the Blood Bank Commission.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: This committee has reviewed the report of the Committee on Industrial Health together with a new report containing a rewording of the final two paragraphs. The committee recommends approval of this report.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we adopt this section of the report. Is there any discussion? Those in favor signify by saying "aye." The contrary, "no." It is accepted.

Dr. Batten: Section Sixteen:

We have carefully reviewed the report of the C.M.A.-C.P.S. Fee Schedule Committee, better known as the Committee of Eight. The committee also reviewed the supplementary report presented by Dr. Burnham at the Sunday session of the House of Delegates. It is the recommendation of this committee that these reports be approved.

In making this recommendation, the reference committee understands that the fee schedule as originally presented to the House of Delegates, C.M.A., December, 1951, is not specifically approved or disapproved but remains in committee for their further action.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report be accepted. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is passed.

Dr. Batten: Section Seventeen:

This committee has reviewed the report of the C.M.A.-C.P.S. Study Committee as presented before the House of Delegates on Sunday, April 27. We are impressed with the vast amount of time and effort that this study committee has spent on the problems which confronted them and in the preparation of the report.

This committee recognizes that this is an interim report. We recommend the approval of the report as a whole and particularly the five specific recommendations contained therein. This committee strongly advises that this report of the C.P.S. Study Committee be transmitted forthwith to the Council for immediate action on the five specific recommendations.

This committee feels that the C.P.S. Study Committee is to be heartily commended for its efforts and accomplishments to date and it is our recommendation that the committee continue their very good work.

Mr. Speaker, I move the adoption of this section of our report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Batten: Mr. Speaker, I move the adoption of the report as a whole.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt the report as a whole, as amended by legal counsel. All those in favor of accepting this report as a whole signify by saying "aye." To the contrary, "no." It is accepted.

Speaker Charnock: Thank you, Dr. Batten, and your committee.

We will now have the report of Reference Committee No. 2.

REPORT OF REFERENCE COMMITTEE No. 2

Dr. Stanley Truman, Chairman: Mr. Speaker and members of the House of Delegates: The committee considered the report of the Secretary, Dr. Albert C. Daniels, and wishes to commend him for his excellent work in behalf of the Association, particularly in setting up the excellent scientific sessions at both the interim and annual meetings, and in addition to his regular duties as secretary of the Association. The committee has no additions or corrections to make in the Secretary's report, and therefore, Mr. Speaker, we recommend the adoption of the report as printed in the Annual Reports Bulletin.

Mr. Speaker, I move the adoption of this section of the committee's report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the report. Is there any discussion? Those in favor will signify by saying "aye." Those opposed, "no." It is accepted.

Dr. Truman: The committee considered the report of the Executive Secretary, Mr. John Hunton, and wishes to commend the Executive Secretary for the excellence of his report. We wish to express to him our appreciation of his efforts in our behalf. We consider ourselves most fortunate in having such a capable and loyal administrator. The committee hopes that all members of the House of Delegates will study the report of the Executive Secretary if they have not already done so, as it is a most effective analysis in a few words of the many activities of the California Medical Association for the past year. The committee has no additions or corrections to make in the Executive Secretary's report, and therefore Mr. Speaker, I move the adoption of the report as printed in the Annual Reports Bulletin.

Mr. Speaker, I move the adoption of this section of the committee's report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept this section of the committee's report. Is there any discussion? Those in favor signify by saying "aye." Those to the contrary, "no." It is accepted.

Dr. Truman: The committee considered the report of the Treasurer which consists primarily of audited accounts submitted by John F. Forbes and Company, Certified Public Accountants. This report has been published and has been in your hands for several days. The committee finds the financial report to be in order, and therefore, Mr. Speaker, we recommend its adoption.

Mr. Speaker, I move the adoption of this section of the committee's report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report. Is there any discussion? Those in favor of adopting this section of the report signify by saying "aye." To the contrary, "no." It is accepted.

Dr. Truman: The committee considered the annual budget proposed for the fiscal year 1952-1953 as formulated by the Auditing Committee. Each member has a copy in hand. Those have been passed around. The committee considered the budget item by item. You will notice that the general income and expenditures are separated from the income and expenditures of California Medicine. It is suggested by the committee that some of these items may need explanation. The proposed budget is predicated on annual dues of $40 per active member per year. Item 1 would be the item from the annual dues. Item 2 would be the income from the annual session, which means the income from exhibitors. It might be called to the delegates' attention that the exhibitors are pleased when members of the House of Delegates particularly, and the membership of the California Medical Association show interest in their exhibits. This is one of the easiest ways we can assist our organization in financing its program.

Skipping down to some other significant items, I think many of these are self-explanatory. Number 12, salaries. The committee investigated and convinced itself that adequate increases in salary had been given to members of the staff as a reward for their efforts on our behalf. We felt that these were justified and had been taken care of.

Item 22, Cancer Commission. You will notice an increase of a considerable amount. This has been done because the Public Health Service has been contributing a certain amount to the Cancer Commission work. This amount will not be utilized in the future, and so the California Medical Association and the Cancer Commission are financing this entire program.

Items 26 and 27 are actually public relations together, and Item 26 is included in a $9,000 item, a retainer fee for the firm of Whitaker and Baxter. I do not believe that this organization has had the opportunity of meeting the high-powered public relations personnel that we are fortunate enough to have on our staff, and I think that you would appreciate the opportunity of having these capable men introduced to you, and I think it would be appropriate if I step aside and ask our Executive Secretary, Mr. John Hunton, to introduce them to you at this time.

Executive Secretary Hunton: It is a pleasure to introduce to you the personnel of our public relations department. Mr. Ed Clancy, the director of that department, is a former newspaper publisher, a man who has been associated with the field of public relations work for a period of about twenty-five years. Before coming to the California Medical Association, he was employed by Whitaker and Baxter for a period of three years in charge of the campaign put on by Whitaker and Baxter for the C.M.A. Mr. Clancy, stand up, please. (Applause.)

Seated next to Mr. Clancy is Mr. Glenn Gillette who is Mr. Clancy's right hand man in Northern California. Mr. Gillette likewise was employed by Whitaker and Baxter before coming to the C.M.A. He likewise worked on our campaign in 1946 and '47 when the going was rough, and when the campaign was over and his services were no longer needed there, he was grabbed up by the Fresno County Medical Society as executive secretary. He served in that capacity for approximately three years, up to the time we started our own program, and at which time we felt very fortunate to secure his services. Glenn, will you take a bow. (Applause.)

Last, but by no means least, Mr. Jerry Pettis. Before coming to the C.M.A. he was for ten years associated with United Airlines—for six years of that time as a pilot, where he was checked out to fly every type of equipment that United operates. For the last four years of that time he was a special assistant to the president of United Airlines, Mr. William Patterson, in which capacity he represented Mr. Patterson and the company as a front man, a public relations man, not only throughout the United States, but throughout the world. Many of you who have been associated with the programs, the postgraduate programs of the College of Medical Evangelists, are aware of the fact that for the past five years Jerry Pettis has handled the publicity and the public relations of that postgraduate institute and has done a splendid job. This year we were very happy to lend him again to the school's alumni committee to do a job, and the telegrams and letters we received from the officers of the school were glowing in their praise for what Jerry had done. He is associated with Mr. Clancy in our Southern California office, and is covering the Southern California counties, eleven or twelve of them. Jerry, will you stand up, please. (Applause.)

I didn't know Dr. Truman was going to call on me. He took me by surprise, but I would like to add a word of my own at the same time. When we started this program—Mr. Pettis and Mr. Gillette came with us on September 1 of last year—it was my belief that it would take us approximately twelve months to work out any kind of grass roots program throughout the county medical societies under which we could really start to make some progress. We have debated this question for about three years in this House of Delegates, as to whether or not public relations should be handled within or without the Association. Starting from scratch last September 1, it was my initial belief that we would take at least twelve months to work up something that we would really market, that we could sell to the county medical societies and then sell to the public. I frankly have been amazed at the speed with which these men have been able to work up a program, to take it to the county societies and put it into effect.

Last Friday we held a meeting of the Advisory Planning Committee at which the executive secretaries of nine of our county medical societies were present. I took that occasion to go around the room to ask every man what he thought of the program we had developed, whether or not he thought it was effective within his own county, whether or not he thought it was capable of further development and utilization through the county societies to carry the message of medicine to the public. The answer was unanimous. I don't think I need say any more. (Applause.)

Dr. Truman: Thank you very much, Mr. Hunton. This was a spontaneous idea of my own. I think you will not regret this opportunity to meet these men.

Are there any questions about the budget?

Dr. Rice: I rise to a point of order. I'd like to have this answered if it could be by one of the members of the Council. This really is three questions in one. Is this $9,000 any cut over last year's expenditure for Whitaker and Baxter? And second, what are we going to get in 1952 and '53 for our $9,000 for Whitaker and Baxter? Three, does the Council as a whole—what does the Council feel? Do they feel that this $9,000 should be spent this way rather than adding to our own public relations group that we have started?

Dr. Sidney J. Shipman: The function of Whitaker and Baxter is entirely distinct from the function of our own Advisory Planning Committee. To answer your first question: No, the $9,000 represents no reduction. It represents a sum similar to that which we spent last year. Those of you who have been in the House and associated with the C.M.A. for any length of time will recall the work which Whitaker and Baxter did for us when we were in real trouble up in Sacramento. They played a large part in saving the private practice of medicine for us. At the present time, the heat is off at Sacramento, but it is a fact that we may expect difficulty there in a legislative way. I'm sorry Dr. Murray had to leave because he intended to present this himself. It may be Mr. Hassard can add a few words. The fact is there may be an initiative in the fall for which we'll need the services of Whitaker and Baxter and there are various other things: the clipping service, which is valuable, especially in papers in small towns, which I see frequently; and we also have the privilege of consulting with Whitaker and Baxter, which we do about twice a month. Clem comes over and sees me or I see him and frequently we are in touch on the telephone over matters on which they can give us advice. The question has come up as to whether they are worth $9,000 a year to us. I think they are. I've talked to various officers of the Association about it and I've talked it over with Whitaker and Baxter themselves and I've talked it over with our employees. It would be idle to think that they could duplicate the service which you have just heard about from Mr. Hunton. They don't plan to. Neither could our own group duplicate the service which Whitaker and Baxter have given us. In a certain sense they stand by as an attorney might stand by if you put him on a retainer so you could call upon him in time of emergency. We expect that service from Whitaker and Baxter. I think myself that their fee is reasonable. It might be it could be reduced somewhat. We might make that attempt. Does that answer your question?

Dr. Rice: Yes.

Dr. Sidney Shipman: Now I would like to amend the report of the budget committee in one respect. We had a letter. Mr. Hunton had a letter dated April 22, 1952, from Dr. Frank Long, the secretary of the Sonoma County Medical Society, in which he said, "We have one member who is truly in a situation of hardship because of moving his practice and the fact that he is just making a start. He has been in practice less than one year, and in accordance with our by-laws, Chapter X, Section 3, Paragraph A, a reduction of dues for such members of 25 per cent of the usual amount may be made by the House of Delegates. We hereby ask this allowance be made for this particular doctor."

Now that can be done. The Council couldn't do it. You people have to do it. It can be done in accordance with Section III, Chapter X, which provides that the House of Delegates may reduce the annual dues of active members as follows:

"(a) Those who have been in practice for less than one year may be reduced to one-fourth of the regular dues. Those who have been in practice for less than two years and those who have been practicing for three years, three-quarters."

I would like to make this apply not only to this particular case, but any other cases of hardship which would come up.

I therefore move this amendment be adopted.

Speaker Charnock: Is there a second to this amendment?

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this amendment be attached to the report of reference committee No. 2. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is amended.

Dr. Truman: Are there any other questions or clarifications of the budget desired from the members of the House? The proposed budget is predicated on annual dues of $40 per year per active member. The committee feels it is entirely satisfactory.

Therefore, Mr. Speaker, we recommend the adoption of the annual dues of $40. I move the adoption of this section of the committee's report as amended.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this section of the report as amended. Is there any discussion? Those in favor signify by saying "aye." The contrary, "no." It is accepted.

Dr. Truman: I want to thank the members of the committee, Drs. John C. Ruddock and Samuel B. Randall for their assistance, and to thank the members who appeared before the committee with their intelligent and interested comments, suggestions and questions. I should like at this time to tell you that over a dozen members appeared before this reference committee. Last year one appeared, and the previous three or four years, none appeared. I think this is an example of an increase of interest and activity in the part of the membership that is to be highly commended.

I move the adoption of the report of the reference committee No. 2 as a whole as amended.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we accept the report of reference committee No. 2 as amended. Is there any discussion? All those in favor signify by saying "aye." To the contrary, "no." It is accepted.

Speaker Charnock: We will now have the report of reference committee No. 3.

In a new amendment to the by-laws passed earlier in the evening, it is possible for anybody to designate a resolution which they have presented as an emergency resolution. This requires a two-thirds vote of the House. As Dr. Bailey reports these resolutions, those of you who wish to designate them as emergencies may do so.

REPORT OF REFERENCE COMMITTEE
No. 3

Dr. E. C. Halley: Mr. Speaker and members of the House of Delegates: Your reference committee, composed of Drs. E. C. Rosenow, Jr., Francis Rochex and myself as chairman, received from the House of Delegates a total of 17 resolutions at the meeting of April 27. Four of these were declared emergencies.

Two resolutions, numbers 13 and 14 as introduced by Dr. J. B. McCarthy of Monterey, were withdrawn at his request after discussion provided evidence that vigorous action is already being taken to clear those abuses which led to the drafting of these resolutions.

I would like to thank the other members of the committee for their excellent help in the work of reference committee No. 3. I also wish to thank Mr. Hassard who advised us on many matters, and I would like to thank also Miss Laughlin in Mr. Hunton's office who helped us very, very much.

The committee received a total of 17 resolutions at the meeting of April 27. Four of these were declared emergency resolutions when they were introduced by the authors. Since four of these have been declared emergency resolutions and with your action this afternoon, presumably those are the only four resolutions this committee has to take any definitive action on tonight unless others are so declared as emergencies.

It is therefore the recommendation of our committee that in view of the fact that the House has decided to continue the interim session and Committee No. 3 is required to make a written report and such report is in your hands, it is therefore our recommendation that the remainder of the resolutions not acted upon tonight be returned to our committee for further study and report back in December or the next meeting.

Resolution No. 1 was introduced as an emergency resolution and was introduced by Dr. Sidney Shipman at the instance of the Council and was declared an emergency. This resolution refers to the program that is already under way between representatives of the osteopathic and the medical professions to amalgamate the two professions for the eventual benefit of the public.

Your committee recommends that this resolution do pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

SPEAKER CHARNOCK: It is moved and seconded that we adopt this section of the report. Is there any discussion? This will require a two-thirds vote. Those in favor of the acceptance of resolution No. 1 will signify by saying "aye." Those opposed, "no." It is passed.

DR. HALLEY: Resolution No. 2 was introduced by Joseph W. Telford for the San Diego delegation and was declared an emergency. This resolution pertains to the great number of vacancies in hospital internships and provides a suggestion that the American Medical Association restate and reevaluate their policy regarding the establishment of internships and residencies.

While the committee realizes that many aspects of this problem cannot be covered by the resolution, the intent is a favorable one for the adequate medical and hospital care of the public. Your committee recommends that the fourth paragraph be deleted and hereby submits the following amended resolution:

WHEREAS, The number of internships and residencies now exceeds the number of physicians available for these positions; and

WHEREAS, This situation is now creating a problem of adequate medical coverage in many hospitals; and

WHEREAS, The employment of physicians to cover services where interns and/or residents are not available is creating a policy which jeopardizes the training program; and

WHEREAS, The number of residencies and internships available seems to be increased by the continuing demands of hospitals for larger staffs and the creation of additional vacancies by some hospitals that do not offer the fullest training; now, therefore, be it

Resolved, That this House of Delegates instruct the Delegates to the A.M.A. to present a resolution for immediate restudy and reevaluation of the policy of establishing residencies and internships toward the purpose of correcting the gross imbalance between the large number of established residencies and internships and the number of physicians available to fill them, and that this discrepancy be corrected as soon as possible.

Mr. Speaker, your committee recommends that this amended resolution do pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report. Is there any discussion? Those in favor of this section will signify by saying "aye." To the contrary, "no." It is accepted.

DR. HALLEY: Resolution No. 8 was introduced by Burt Davis of Santa Clara County, as an emergency resolution. This resolution refers to the problem of providing medical care for servicemen's dependents. A similar resolution to this was passed last year by the C.M.A. House of Delegates. The committee is in sympathy with the aims and principles incorporated in this resolution, but inasmuch as a similar resolution was passed last year and is the policy of the C.M.A., we feel that it is unnecessary to adopt this resolution again. We therefore recommend it do not pass.

Mr. Speaker, I move the adoption of this section of our report.

SPEAKER CHARNOCK: It has been moved and seconded that this report do not pass. Is there any discussion?

DR. LESLIE MAGOON: I rise to a point of order to correct a situation that is going to get out of hand. The adoption of this resolution requires a two-thirds majority. By phrasing their recommendation in the negative, it would require only a one-third minority to accept the report of the committee. Should it not properly be taken on the amendment, rather than on the report?

SPEAKER CHARNOCK: That's well taken, and we will take it on the resolution itself rather than on the report of the reference committee. Those who are in favor of resolution No. 8 will signify by saying "aye." The contrary, "no." It is defeated.

DR. HALLEY: Resolution No. 5 was introduced by J. B. McCarthy for the Monterey County Medical Society as an emergency resolution. This refers to the simplification of C.P.S. contracts.

Inasmuch as the C.P.S. Study Committee is actively engaged in a study of all aspects of C.P.S., including the type of policies written, your committee feels that the intent of this resolution has already been met by the resolution setting up the C.P.S. Study Committee and we recommend that the House refer this resolution to the C.P.S. Study Committee.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

SPEAKER CHARNOCK: There has been a motion to refer. It requires only a majority vote. Those in favor of this action of the report signify by saying "aye." To the contrary? It is referred to the C.P.S. Study Committee.

DR. HALLEY: Well, Mr. Speaker, as I understand it, that completes the resolutions that we have to entertain at this moment unless by further order they are declared emergencies.

SPEAKER CHARNOCK: You stand by for a minute. Some of the other motions are to be declared emergencies.

DR. WALTER BECKH (San Francisco County): This concerns resolution No. 6 originally introduced by Henry Gibbons who has been taken ill and for whom I speak. The Crippled Children's Act resolution as you will recall charged the Council to take action to correct certain abuses that we have been aware of for some time. When this resolution was originally being made ready for the House of Delegates, there appeared no particular element of emergency about it because these things have been going on for some time. However, those of you who heard Dr. Dwight Murray yesterday, heard that the Legislature is concerning itself actively with the Crippled Children's Act and what is wrong with it. I discussed the matter with Dwight Murray before he took his train a little while ago and he was most emphatic, that the passage of this resolution at this time was most urgent in order to acquaint the Legislature with the fact that the medical organization at large is concerned with the matter, and it is for this reason that I ask you to declare this an emergency measure.

SPEAKER CHARNOCK: Mr. Hassard, will you answer a question whether or not the material in this resolution is to be studied by the interim committee?

MR. HASSARD: Yes, it is, as I understand it. The Assembly Interim Committee on Public Health intended to conduct in the next few months a study of all phases of the crippled children's services under the present Crippled Children's Act, and the administrative regulations thereunder.

SPEAKER CHARNOCK: I'm wondering then if perhaps we could just let this go as a regular resolution and allow the report of the committee to guide us on this.

DR. WALTER BECKH: Dr. Murray felt an expression of the House of Delegates as a whole was very much in order.

SPEAKER CHARNOCK: Dr. Halley, will you proceed as an emergency resolution?

DR. HALLEY: Handle it as an emergency resolution.

MR. HASSARD: Excuse me. Mr. Speaker. It is confusing. Because the House amended the by-laws earlier today, you have a new by-law provision. This is the first time it's come into play. This was just adopted a few hours ago. "At every meeting, at any session of the House of Delegates, the Speaker shall designate a time at which any member may request the permission of the House to introduce an emergency resolution for immediate consideration." If I may interrupt there, the Speaker a few moments ago designated this as the time. "Such permission shall require a two-thirds affirmative vote of the members of the House present and voting. Such permission having been granted, the resolution must be acted upon during that session of the House, and the Speaker may if necessary and at his discretion, waive the rule of referring the resolution to a committee. The passage of such emergency resolution shall require a two-thirds affirmative vote of all members present and voting." So that you have to vote twice in order to enact an emergency resolution; first to hear it, and then to act upon it.

SPEAKER CHARNOCK: Thank you, Mr. Hassard. Dr. Beckh has moved this become an emergency resolution. Is there a second? It has been moved and seconded that resolution No. 6 be designated an emergency resolution. Those in favor will signify by saying "aye." To the contrary? It is declared an emergency.

DR. HALLEY: Resolution No. 6. Resolution No. 6 was introduced by Henry Gibbons III, of San Francisco. This refers to the Crippled Children's Act wherein the Council is instructed to institute negotiations with the California State Department of Public Health with a view toward eliminating the elastic economic and medical standards and eliminating other abusive practices.

The committee feels that there are widespread abuses of this act wherein an ever expanding group of conditions are considered to be under this act and wherein the economic status of the patient is ignored and wherein the patient is deprived of his free choice of physician by an arbitrary, bureaucratic set of rules. We agree with the resolution that these abusive practices have rendered the Crippled Children's Act an entering wedge for socialized medicine and we are also in sympathy with the need for vigilance and that such negotiations and consultations be of a periodic order. We therefore recommend a do pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded we adopt this section of the report. Is there any discussion?

DR. BURT DAVIS: I have an amendment to an emergency resolution. Is it in order? I should like to amend the resolution to add the following two paragraphs: First:

Resolved, That the House of Delegates of the California Medical Association hereby reaffirms its stand taken in 1951. The Crippled Children's Act as largely financed by the state and local governments is a state and local affair, and should not be subject to federal control or direction.

The second paragraph,

That the House of Delegates of the California Medical Association instruct the secretary of the Association to express its appreciation to respective committees of the California State Legislature which have recognized and are considering this problem and offer any assistance within the power of the Association which these committees may request in order that this practice may be eliminated.

SPEAKER CHARNOCK: Is there a second to this amendment?

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this amendment be made. Is there any discussion? Those in favor signify by saying "aye." Those to the contrary? It is passed.

Speaker Charnock: We now have before us the resolution as amended that has been moved and seconded. Is there any discussion? Those in favor of the resolution as amended will signify by saying "aye." To the contrary? It is passed.

Speaker Charnock: May we have a copy of that amendment, please?

Are there any further resolutions whose proponents wish to make emergencies?

Dr. Donald Campbell (San Francisco County): Mr. Speaker and Delegates, because of the illness of Dr. Henry Gibbons III and the absence of Dr. Rochex who was supposed to talk about this resolution, they have asked me as a delegate and secretary and treasurer of the San Francisco County Society to say a few words to declare resolution No. 7 an emergency.

We have an unusual condition in the North that I believe you in the South do not have. Our labor unions are very active and strong, and they have written certain contracts that expire I believe in July and August, and because of the possible action that they may take, we in San Francisco and the delegation believe that this resolution if passed as an emergency would help us no end. So I hereby declare this an emergency resolution. Thank you.

Speaker Charnock: Dr. Campbell has moved resolution No. 7 to be declared an emergency. Is there a second?

. . . Motion seconded. . . .

Speaker Charnock: Is there any discussion on this? Those in favor of declaring resolution No. 7 an emergency will signify by saying "aye." To the contrary? It is so declared.

Dr. Halley: Resolution No. 7. This refers to voluntary health insurance and the formation of a commission for the integration and study of all aspects of prepaid medical care, including C.P.S., insurance company plans, industrial accident schedules, and union labor plans.

Your committee proposes an amendment to the resolution changing the title of the commission created from "Prepaid Medical Care Commission" to "Medical Services Commission."

Your committee calls to your attention the fact that on Sunday the House adopted a resolution directing the Council to create a special committee whose functions are somewhat parallel to the functions contemplated by this resolution. To avoid duplication of effort it is this committee's recommendation that in carrying out the resolution adopted Sunday, the Council appoint to the special committee the same persons that are appointed as the first members of the Medical Service Commission so that the same people may have before them the entire subject matter.

It is our understanding that the formation of this commission will in no way change the status of the C.P.S. Study Committee which is at present working on special problems, while this is a permanent commission for the integration and study of improvement to all forms of medical service.

Your committee recommends that this amended resolution do pass.

Mr. Speaker, I move the adoption of this section of this report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that this section of the report be adopted. Is there any discussion? Those in favor will signify by saying "aye." To the contrary, "no." It is adopted.

Speaker Charnock: Is there any other?

Dr. Wilbur Bailey: Mr. Speaker, resolution No. 11 was introduced by me on page 4, not in my official capacity as chairman of the Los Angeles delegation, but because both Dr. Regan and Mr. Hassard asked me to introduce it. As you may know, the Board of Medical Examiners is included under the Business and Professions Code along with embalmers and the pest control inspectors and the mattress inspectors and the osteopathic and chiropractic people and dentists who have their own board, and we're rightly jealous. Anyhow, this will implement and make the board a little more powerful and make us a little more powerful when it comes to some of the problems we've just recently had. So I think it would be better if we, after talking to Mr. Hassard called it "Amending the Medical Practice Act to establish procedures consistent with due process of law, under which the Board of Medical Examiners can discipline physicians guilty of gross immorality or acts involving moral turpitude, and

"Amending the Medical Practice Act to strengthen the autonomy and enforcement powers of the Board of Medical Examiners."

Therefore I declare it an emergency so we are able to get it before the next Legislature.

Speaker Charnock: Dr. Bailey has moved that resolution 11 be declared an emergency. Is there a second?

. . . Motion seconded. . . .

Speaker Charnock: Is there any discussion? Those in favor of declaring this an emergency will signify by saying "aye." To the contrary, "no." It is declared an emergency.

Dr. Halley: Resolution No. 11, introduced by Wilbur Bailey of Los Angeles County. This resolution concerns increasing the autonomy and ability of the State Board of Medical Examiners to enforce the Medical Practice Act.

After consideration, we felt that the original resolution could be strengthened by restatement and accordingly we propose a substitute resolution as follows:

Resolved, That the Committee on Public Policy and Legislation be directed to confer with the State Board of Medical Examiners and to develop legislation designed to accomplish the following:

1. Amending the Medical Practice Act to establish procedures, consistent with due process of law,

under which the Board of Medical Examiners can discipline physicians guilty of gross immorality or acts involving moral turpitude, and

2. Amending the Medical Practice Act to strengthen the autonomy and enforcement powers of the Board of Medical Examiners.

The committee feels that the intent of the original resolution is incorporated and is further extended and strengthened by the substitute resolution and we therefore urge a do pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we adopt this section of the report. Is there any discussion? Those in favor of adopting resolution No. 11 will signify by saying "aye." To the contrary, "no." It is adopted.

Speaker Charnock: Are there any other proponents of resolutions who would like a hearing?

Dr. Halley: Well, in conclusion I want to again thank the members of our committee. I wish to thank all the members of the House who appeared before the committee either for or against these resolutions, and it has been a great experience to have been here.

Mr. Speaker, I move the adoption of this amended report as a whole.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded we adopt this report as a whole, as amended. Is there any discussion? Those in favor signify by saying "aye." To the contrary, "no." It is adopted.

Speaker Charnock: Unfinished business. The secretary reports no unfinished business. Under new business the secretary has this emergency resolution the Pathological Section wishes. Will you please read it?

Secretary Daniels: Mr. Speaker, do you desire this resolution to be reread? This is the resolution of the Pathological and Bacteriology Section of the California Medical Association of April 28, 1952, with regard that it be declared an emergency and be acted upon.

Speaker Charnock: It has been moved and seconded we declare this an emergency. Is there any discussion? Those in favor will signify by saying "aye." To the contrary, "no." It is declared an emergency.

Speaker Charnock: We will entertain a motion to adopt this resolution.

A Delegate: I so move.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that we adopt this resolution. Those in favor signify by saying "aye." Those opposed. "no." It is adopted.

Vice-Speaker Randel: Ladies and gentlemen of this House of Delegates, we now approach that high spot of the evening proceedings—

A Delegate: We are still on new business.

Speaker Charnock: If anybody has any new business we will be glad to entertain it.

Dr. J. M. de los Reyes (Los Angeles County): One of the finest phases of the scientific program was the motion picture section, especially in the surgical field, planning and techniques and procedure. One hundred and one films were shown in three and a half days, twenty-eight hours.

I ask permission of the Speaker of the House of Delegates to present the following motion, that we hereby commend Dr. Arthur Smith and his committee for the fine work they did in bringing about this part of the scientific program.

. . . Motion seconded. . . .

Speaker Charnock: It has been moved and seconded that the secretary write a letter commending Dr. Arthur Smith and his committee on the fine work in the motion picture program. Those in favor signify by saying "aye." To the contrary, "no." It is passed.

Vice-Speaker Randel: Again, I have that pleasant duty of presenting to this House of Delegates your new officers for the ensuing year. First our President, Dr. Alesen. (Standing applause.)

Dr. L. A. Alesen: Mr. Speaker and members of the House of Delegates, ladies and gentlemen: During the past few years you have heard from me often and much, perhaps too often and perhaps too much. However, I crave your kind indulgence for just a few more brief moments in order to accept the office to which you have elected me. May I say I greatly appreciate that office. I accept it with proper humility and with appreciation of the responsibilities that go with it. In the exercise of that office, it will be my purpose to so comport myself as to reflect credit upon the California Medical Association, and use my very best energies and talents to help attain the achievements the Association desires in good medical care available to everyone.

There is a second purpose, to which I should like to direct my feeble talents and my few energies. You well know, at least most of you do, it has long been my view and a view I believe that is thoroughly grounded on the basic rock of history and biologic facts, that a physician owes more to his patient and to society in which he lives than just a mere performance of perfunctory professional duties in his own particular area. It is my opinion that by training, by history, and by experience a man who is well trained of course to look upon the human body in sickness and disease with an objective criticism could very ably be turned to an objective appraisal of the ills of the body politic. The same type of skepticism that diagnoses and treats cancer and T.B. in the sick human body could well be turned to diagnose a cancer of collective ills in the body politic. Therefore, I suggest you and I use more than our talents if we have them, but to do our very best to keep America, your country and mine, on a return to economic and social and political sanity. I believe, Mr. Speaker, we, the men and women of medicine, have a wonderful opportunity. Let's reclaim freedom in America. (Applause.)

VICE-SPEAKER RANDEL: That couldn't be any more inspired. My next privilege is to introduce to you the Speaker of the House. I beg your pardon. The President-Elect, Dr. John Green. (Standing applause.)

DR. JOHN W. GREEN: Members of the House, I have something on my mind and have had it on my mind for a great many years. At this moment I should like to tell you what it is. We have been hearing so very much recently about various types of abuse, including that old one of fees, which perhaps isn't so common these days, and others like fee splitting, and others that have taken its place. I should like to call your attention to one fact, that there is scarcely any other way of getting around such abuses than to return to the old dictum that we had years ago when I was a young doctor just beginning; to rededicate our profession to the care of the sick and let them pay for that service as a matter of course. It seems to me that we have come a long way towards thinking too much of a dollar. Of course I will admit mounting costs of keeping a home and educating children, buying clothing and other necessities which we have, perhaps may be some excuse in a manner for this, but I believe that if we have somebody in the medical schools who might perhaps train the young doctors more in the care of the sick and sympathy for illness that we wouldn't have the abuses we have at the present time. That's all I have at this time to say.

At this time it becomes my pleasure to introduce your new Speaker of the House, Don Charnock, who will succeed himself in the ensuing year. (Applause.)

DR. CHARNOCK: I don't think it is customary for the Speaker to make a speech. There is one thing I would like to leave with you. The Speaker and the Vice-Speaker during this next year are going to strive to the utmost to improve the mechanics of running this House of Delegates. We have run under a new constitution with a few little quirks here and there, but we're going to run this thing more efficiently so we will have plenty of time for discussion and less time for details. I think we have made a good start on the elimination of the roll call for which credit goes to young Dr. Foster who had the guts to suggest it. We thought it was all illegal, but it worked very well. There are several things we are going to try to do. We are going to try to get a better room for you that is better ventilated. (Applause.) We are going to try to eliminate all these interruptions if possible. Some of them of course are very important, but we are going to try to start on time and end on time.

It is a pleasure now to present the Vice-Speaker, Wilbur Bailey. (Applause.)

DR. WILBUR BAILEY: I heartily concur with everything that the Speaker has said. I concur completely and have nothing further to report.

SPEAKER CHARNOCK: Now comes the time for a very pleasant duty for which we are going to ask Dr. Donald Cass to step forward.

DR. DONALD CASS: I don't have anything to say about Gordon. All I want to tell you is in my opinion that's the best damn President we ever had. (Applause.)

DR. H. GORDON MACLEAN: It is a very great pleasure for me to receive this from the California Medical Association, and it is not hard for you to see I received it directly from one of my very best friends. I appreciate it. As I was going out of the Coconut Grove today someone asked me if I had any other performances to go through with, and I said, "Yes, I am going to receive a plaque this evening." My wife reminded me I had a few of them in the bottom drawer of my desk. I assure you gentlemen that this will never get down there because I am going to keep it where I can look at it because to me it brings back very many pleasant memories. Thank you. (Applause.)

SPEAKER CHARNOCK: We will entertain a motion for the approval of the minutes, that they stand submitted by the committees.

A DELEGATE: I move the minutes be submitted. . . . Motion seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that the minutes be approved as the committees submitted them. Those in favor signify by saying "aye." Those to the contrary, "no." They are accepted.

SPEAKER CHARNOCK: Is there any other new business to come before this body? If not, a motion to adjourn is in order.

It is moved and seconded we adjourn. Those in favor signify by saying "aye." We are adjourned.

The meeting adjourned at 9:30 p.m. . . .

In Memoriam

Holt, Rufus A. Died in Madera, May 16, 1952, aged 62, of coronary artery disease. Graduate of the College of Physicians and Surgeons, Los Angeles, 1915. Licensed in California in 1915. Doctor Holt was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Karfiol, George J. Died in San Francisco, May 10, 1952, aged 51. Graduate of Ludwig-Maximilians-Universität, Medizinische Fakultät, München, Bavaria, 1925. Licensed in California in 1935. Doctor Karfiol was a member of the San Francisco Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Kopelowitz, Jonas C. Died in Hollywood, May 4, 1952, aged 60, of hypertensive cardiovascular disease and chronic glomerulonephritis. Graduate of the Washington University School of Medicine, St. Louis, Missouri, 1913. Licensed in California in 1927. Doctor Kopelowitz was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Mallette, Lester B. Died in San Francisco, May 15, 1952, aged 33. Graduate of Northwestern University Medical School, Chicago, 1944. Licensed in California in 1947. Doctor Mallette was a member of the San Francisco Medical Association, the California Medical Association, and the American Medical Association.

✤

Moore, Telford J. Died in Los Angeles, May 6, 1952, aged 45. Graduate of the University of Illinois College of Medicine, Chicago, 1934. Licensed in California in 1942. Doctor Moore was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

✤

Ryder, Bayard E. Died in Los Angeles, May 12, 1952, aged 78. Graduate of the University of Illinois College of Medicine, Chicago, 1900. Licensed in California in 1913. Doctor Ryder was a retired member of the Los Angeles County Medical Association, and the California Medical Association.

✤

Sheller, William O. Died in Los Angeles, April 23, 1952, aged 78, of rupture of dissecting aneurysm of aorta. Graduate of the University of Illinois College of Medicine, Chicago, 1902. Licensed in California in 1925. Doctor Sheller was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an Associate Fellow of the American Medical Association.

✤

Stuart, Clyde G. Died in Los Angeles, May 8, 1952, aged 49, of hypertensive heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1938. Licensed in California in 1938. Doctor Stuart was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Whitaker, Leslie S. Died in San Jose, May 10, 1952, aged 52, of coronary artery disease. Graduate of the University of Louisville School of Medicine, Kentucky, 1926. Licensed in California in 1926. Doctor Whitaker was a member of the Santa Clara County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Q. & A. on C. P. S.

Question: I am treating a veteran for arthritis, for which he has a service-connected disability. Can I prescribe medication for another ailment for which he does not have a service-connected disability?

Answer: Not under the veterans' home town care program, which is confined to treatment of conditions which have been adjudicated as service-connected. Services of any kind including medication, which a veteran receives from a private physician for non-service-connected ailments are the veteran's personal responsibility; they will not be authorized and paid for by the Veterans Administration.

In short, veterans are in the same category as private patients when they receive services for any ailments, except those for which they have a service-connected disability.

Question: Under the Veterans Program, must authorized services be performed during the month of authorization?

Answer: Yes. A Veterans Administration authorization applies only to the month of authorization. (For example: If a G.I. series is authorized in January, but is not performed until February, payment will not be approved by the VA. A new authorization for the G.I. series would have to be obtained.)

Question: If I find that more office visits than the number authorized are necessary in treatment of a veteran patient under the home town care program, how do I obtain authorization for these additional visits?

Answer: The Veterans Administration has agreed to accept collect telephone calls from physicians who require authorization for services which are in addition to those previously authorized for the current month. Physicians who find they need additional authorization should, therefore, telephone the Veterans Administration regional office in San Francisco, Los Angeles or San Diego.

Do not wait until after the additional services have been rendered. The VA cannot make payment for services which have not been previously authorized.

C.P.S. Physicians: Have Necessary Facts at Hand When You Telephone Veterans Administration

When C.P.S. physician members (or assistants in their offices) telephone collect to the Veterans Administration regarding treatment of veteran patients, time and expense will be saved if they make certain that they have the following necessary information at hand:

NEW AND REOPENED CASES:

a. Physician's name, address, telephone number, C.P.S. number.
b. Veteran's full name, address, claim number.
c. Nature of the veteran's ailment.
d. The procedures and/or visits for which authorization is requested for the current and following month.
e. Date when physician wishes to start treatment.

CONTINUED CARE CASES:

(When physician has authority to treat a veteran and wishes additional authority for continued care)

a. Physician's name, address and telephone number.
b. Veteran's name, address and claim number.
c. Nature of veteran's ailment.
d. The procedures and/or visits for which authorization is requested.
e. Date when physician wishes to start treatment.
f. Period of time (first and last dates) covered by previous authority.

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. Edwin H. Lennette, chief of the Viral and Rickettsial Disease Laboratory of the California State Department of Health, is on leave for a six-week period during which he will be in Madrid as a consultant on Q fever. The trip is being made at the request of the Spanish government and under auspices of the World Health Organization. Dr. Lennette is a member of the W.H.O. Expert Committee on Zoonoses.

* * *

Funds for a memorial to the late **Dr. Mabel C. Bennett,** who died early this year, are being received by the Children's Hospital of the East Bay where Dr. Bennett served as a member of the staff. The money collected will be used to buy equipment or to carry out renovations dedicated to the memory of Dr. Bennett.

LOS ANGELES

Dr. Stafford L. Warren, dean of the University of California at Los Angeles School of Medicine, has been announced as the winner of the 1952 Sigma Tau national social science award which is given to the American contributing most during the year to maintain and create interest in social science on the national and international level. Dr. Warren was cited for his contributions to atomic research.

* * *

The fourth annual **postgraduate assembly** sponsored by the medical staff of **Saint John's Hospital,** Santa Monica, will be held September 8 to 10 at the Elks Club, Santa Monica. Guest speakers will include W.A.D. Anderson, professor of pathology, Marquette University School of Medicine; Oliver Cope, M.D., associate professor of surgery, Harvard University School of Medicine; Leo Rigler, M.D., professor of radiology, University of Minnesota; and Stewart Wolf, M.D., professor of medicine, University of Oklahoma School of Medicine.

In addition, panel discussions, tumor board clinical-pathological conferences and general symposia will be held.

SAN FRANCISCO

The Pacific Dermatologic Association will hold its annual meeting at the Palace Hotel in San Francisco, August 29 to 31. The guest speaker will be Dr. Marcus R. Caro of Chicago. This year's program is under the chairmanship of Dr. Nelson Paul Anderson of Los Angeles. Among the features will be a demonstration of the treponeme immobilization test, reports on research activities of the member universities, a clinical and histopathologic meeting and a discussion of dermatologic economics.

* * *

Dr. Sidney J. Shipman of San Francisco was installed as president of the National Tuberculosis Association at the recent annual meeting of the organization in Boston.

* * *

Dr. Thomas E. Gibson was elected president of the Western Section of the American Urological Association at the section's recent annual meeting in Pasadena. The 1953 meeting of the Western Section will be held in San Francisco.

* * *

The San Francisco Heart Association will present its **Annual Postgraduate Symposium on Heart Disease** October 22, 23, and 24, 1952, at the St. Francis Hotel. Guest speakers will be Doctors C. Sidney Burwell of the Harvard University School of Medicine, Julius H. Comroe, Jr., of the Graduate School of Medicine, University of Pennsylvania, and Hans H. Hecht of the College of Medicine, University of Utah. The symposium will include a course in unipolar electrocardiography, a session on childhood heart disease planned for pediatricians, and clinical demonstrations.

Dr. Burwell will discuss the Heart in Pregnancy and the Surgical Treatment of Constrictive Pericarditis. Dr. Comroe's subjects will include the Physiological Basis for Oxygen Therapy and a general discussion of the Sympathetic Nervous System from the Physiological and Pharmacological Point of View.

Further information may be obtained from the office of the San Francisco Heart Association, 604 Mission Street.

SAN MATEO

Dr. St. John Lester was reelected president of the San Mateo County Tuberculosis and Health Association at the annual meeting in May.

GENERAL

The National Gastroenterological Association has announced its annual prize award contest for 1952. One hundred dollars and a certificate of merit will be given for the best unpublished report on gastroenterology or allied subjects entered in the contest. The award is to be made at the annual convention banquet of the National Gastroenterological Association in October of 1952. Entries for the 1952 prize should be limited to 5,000 words, be typewritten in English, prepared in manuscript form, submitted in five copies accompanied by an entry letter, and must be received not later than September 1, 1952. Entries should be addressed to the National Gastroenterological Association, 1819 Broadway, New York 23, New York.

* * *

The 38th annual clinical congress of the **American College of Surgeons** will be held in New York City September 22 to 26. More than 9,000 surgeons from all over the world are expected to attend the program of panel discussions, symposia, surgical forums, motion pictures, cine clinics, color television and exhibits. Headquarters will be at the Waldorf-Astoria.

* * *

The thirtieth annual scientific and clinical session of the **American Congress of Physical Medicine** will be held August 25 to 29, at the Roosevelt Hotel, New York. Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2.

* * *

The eightieth annual meeting of the **American Public Health Association** and the annual meetings of 38 related organizations will be held in Cleveland, October 20-24, Dr. Atwater, executive secretary of the association, announced. He said more than 5,000 professional public health workers from all parts of the free world will attend.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Psychiatry and Neurology—The Langley Porter Clinic.

Date: August 25 through October 31, 1952, ten weeks, full time.

Fee: Fee for the course is $200.

The course is particularly designed to prepare psychiatrists and neurologists for taking the examinations of the American Board of Psychiatry and Neurology.

Conference on General Surgery—Toland Hall, University of California Hospital.

Date: September 8 through 12, 1952.

Fee: $75.00.

This course is offered for the purpose of stressing the newer concepts, methods of diagnosis, treatment, and techniques in surgery. Instruction will consist of didactic periods, panel discussions and actual *Operative Demonstrations.* Class limited to 50.

Ophthalmology—Toland Hall, University of California Hospital.

Date: September 15 through 20, 1952.

Fee: $75.00.

This is a course for specialists. Group instruction with demonstration of patients will be given twice daily.

Chairman: Frederick C. Cordes, M.D.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Postgraduate Courses for Practicing Physicians

Date: September 15-19, 1952.

All-Day Courses: Internal Medicine and Therapeutics; General Surgery and Surgical Anatomy; Cardiology.

Morning Courses: General Medicine; Fractures and Trauma to Soft Tissues; Obstetrics and Gynecology; Dermatology.

Afternoon Courses: Proctology; Pediatrics; Psychiatry; Arthritis and Rheumatic Diseases.

Fee: $75.00 for the combination of morning and afternoon course, or the all-day course (not covered by veterans' educational benefits).

Registration limited: Each physician may register for one morning and one afternoon course or one all-day course.

Contact: Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Internal Medicine—Course 830—Los Angeles County Hospital.

Date: September 15, 1952 through June 1, 1953, full time.

Fee: Fee for the course is $750. Mail check to University of Southern California, School of Medicine, Department of Internal Medicine, Box 158, 1200 North State Street, Los Angeles 33. Course limited to eight students; applications will be accepted until July 15, 1952.

Intensive Review of Internal Medicine—Course 855

Date: September 15 through September 26, 1952—8:30 a.m. to 12:30 p.m., Monday through Friday.

Fee: $50.00; applications accepted until August 1, 1952.

This course is offered for students preparing to take examination for the American Board of Internal Medicine.

Contact: Gordon E. Goodhart, M.D., Director Medical Extension Education, University of Southern California, 1200 North State Street, Los Angeles 33.

INFORMATION

How Can We Prevent Premature Birth?

Report of a Conference

DANIEL G. MORTON, M.D., *Los Angeles*, and
EDMUND W. OVERSTREET, M.D., *San Francisco*

Of approximately 250,000 births each year in the state of California roughly 20,000 are classified as premature (the infants weigh less than 5 pounds 8 ounces). Whereas 99 out of every 100 full-term babies survive the first month after delivery, only 75 of 100 premature infants are alive at the end of that time. Every year, then, in this state about 5,000 premature infants die. Were they carried to term, it might be expected that fewer than 500 would die. Obviously, this yearly loss of about 4,500 infants is a tremendous and tragic waste of human life. Can anything be done about it?

During the month of May 1952, a conference (divided into Northern and Southern California sections) was held for the purpose of examining this question. At first glance there would seem to be nothing unusual or newsworthy about such a meeting. For years obstetricians, pediatricians, general practitioners, experts in public health and others, have met together to discuss the problem of the premature infant. And it cannot be denied that increasingly skillful care of the newborn child, whether full-term or premature, has contributed a major share to the steadily falling neonatal death rate. In 1920 this rate, for all live-births, was 36.2 per thousand; in 1950 it was 18.4 per thousand. But as the rate has fallen the factor of prematurity as a cause of death has become, relatively, larger until today prematurity (with or without other complications) is considered to play a part in about 60 per cent of all neonatal deaths.

So it is significant that on May 14 to 16, 1952, at Asilomar, Calif. (and on May 19 to 21, 1952, at Arrowhead Springs, Calif.), there was held—for the first time anywhere in the world so far as is known—a conference dealing specifically with the topic of the *prevention* of prematurity.

The broad scope of the problem was evidenced by the breadth of representation at the conference. There were obstetricians and pediatricians, both practicing and academic, as well as general practitioners engaged in obstetric and pediatric practice. The schools of medicine and of nursing of this state sent staff members. Professors from the university schools of public health were present, as were biostatisticians, nutritionists, and health education specialists. Inasmuch as organization and management of the conference was accomplished by the State Department of Public Health, and primarily by the Bureau of Maternal and Child Health, representation from various public health services was very complete—members of the state department, local health officers, public health nurses, social service workers, county hospital superintendents. An attempt was made to attack the problem by a coordinated assault by all services and activities in any way concerned with the premature infant.

The basic presentation for the conference (both northern and southern sections) was made by Dr. Nicholson J. Eastman, professor of obstetrics at the Johns Hopkins University School of Medicine. His was the task of outlining present knowledge of the causes of premature delivery. Drawing upon statistics from various communities as well as from his own institution, he divided the etiologic factors into three principal groups:

1. Multiple pregnancy (about 12 per cent of all prematures).
2. Premature delivery involving operative termination of pregnancy (about 13 per cent).
3. Premature delivery occurring spontaneously (about 74 per cent).

Under these headings the various complications of pregnancy capable of producing premature delivery were touched upon.

It is emphasized, however, that only about 50 per cent of premature births are associated with antepartum medical complication, and that even then the causal relationship is often uncertain. A consideration of possible etiologic factors operative in the other 50 per cent of premature deliveries served to emphasize the huge gaps in present understanding of premature labor; and it made clear how essential, in any program designed to prevent prematurity, would be a continuous gathering and correlating of physiological and statistical research data. It also led to considerable discussion of factors suspected of being (but not yet proven to be) etiologic in a large percentage of "idiopathic" premature births, notably nutrition, fatigue, economic status, and psychogenic factors — factors, incidentally, which are especially susceptible of correction by measures in the field of public health.

Following this authoritative outline of the present medical status of the problem, the meeting became a "working conference." The participants were divided into small groups, each of which discussed informally and intensively over a two-day period particular aspects of how to prevent prematurity. The method proved to be a most stimulating, informative, and productive one. Much more extensive reporting of the conference's conclusions than can be included here appears in the June 30, 1952, issue of *California's Health,* the official bulletin of the California State Department of Public Health. The report reflects the earnestness, enthusiasm and ingenuity which the conference members brought to this initial attack on the problem of preventing prematurity.

The discussions revolved about how to implement three principal projects, namely, what can be done and who should be primarily responsible for:

1. Determining needs, correlating modern knowledge and research findings, and measuring progress in the prevention of prematurity.

2. Promoting educational programs for the public, for physicians, for public health workers, and others, aimed at this special goal.

3. Extending and improving prenatal care and services with this specific aim in view.

Obviously any program designed to prevent prematurity will call to its aid workers in all the professional fields already mentioned. Its scope encompasses all those specialties and more. Its success demands extensive, organized, willing cooperation. If it were possible by this means to reduce the present national incidence of prematurity, now about 7 per cent, by a single per cent, literally thousands of infant lives would be saved each year in this country. Clearly, it is worth while to try.

THE PHYSICIAN'S *Bookshelf*

FLUID BALANCE—A Clinical Manual. Carl A. Moyer, M.D., Professor of Surgery, Washington University School of Medicine, St. Louis. The Year Book Publishers, Inc., Chicago, 1952. 191 pages, $3.75.

This is a pocket-sized volume of 191 pages which can be readily used as a reference book on fluid and electrolyte therapy or studied in detail if one wishes a mastery of some of the more complex factors at play in fluid exchange. It is written clearly and concisely, and correlates well the fundamental physiological knowledge with the practical application of this knowledge to the care of patients at the bedside. Among the several recent books on this subject this one appeals to the reviewer as the most serviceable and comprehensible to the clinician. The possible disadvantage to the manual is the orientation essentially in a surgical direction, but the fundamentals are presented in sufficient detail that principles of therapy and understanding can readily be applied to medical problems in fluid management as well. The book will also serve to crystallize and review for the physician many of the recent concepts which have been the subject of individual papers on water, sodium, potassium, and electrolyte therapy. There is no hesitation in recommending this book if one wishes to enrich his understanding of fluid balance from fundamental facts to practical management of difficult therapeutic problems.

* * *

DISORDERS OF THE HEART AND CIRCULATION. Edited by Robert L. Levy, M.D., Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University. Thomas Nelson & Sons, New York, 1951. 944 pages, $12.00.

This group of monographs on cardiovascular disease was originally prepared for the Nelson Loose-Leaf Medicine, and is now presented as a separate volume. The editor offers it "to those with a special interest in cardiovascular disease," and it is to this group of physicians that the book will be of greatest interest and value.

As might be anticipated, some repetition is encountered in the various sections because of the monographic nature of each chapter, but this does not seriously detract from the value of the book as a reference text. The sections on congenital heart disease are unusually detailed and that portion prepared by Dr. Maude Abbott is of particular historical interest. The other sections of the book are uniformly excellent and reflect the ability of the group of authors selected by the editor.

This volume should not be considered a text book for medical students and practitioners, but primarily for those who wish more detailed information than is usually available in the majority of texts on the subject. For this type of reader, the book can be highly recommended.

Illustrations are in the main clearly reproduced, but the section on electrocardiography could be greatly improved by better reproduction of illustrative tracings.

CASE HISTORIES IN PSYCHOSOMATIC MEDICINE. The Staff of the Psychiatric Service, Massachusetts General Hospital, Boston. Edited by Henry H. W. Miles, M.D., Stanley Cobb, M.D., and Harley C. Shands, M.D. W. W. Norton & Company, Inc., New York, 1952. 306 pages, $4.50.

This is a collection of 21 case presentations, some of them previously published, from the Psychiatric Service of the Massachusetts General Hospital. The stated aim in the selection of cases "has been to bring out certain aspects of psychosomatic medicine which may be instructive and useful to students, general practitioners and specialists in other branches of medicine than psychiatry."

The interpretation of the word "psychosomatic" is rather broad. Dr. Cohh defines psychosomatic medicine in the Introduction as "that field of clinical medicine in which the psychiatrist and internist can advantageously work together in the study and treatment of disease." One can then appropriately include a case such as the one entitled "The Emotional Significance of Cancer." Similarly, there are cases entitled "Enuresis," "Feeblemindedness or Pseudoretardation?", "Painful Myostatic Dystonia," and "Impulsive Behavior in a Crippled Boy." One might have preferred a selection of cases more heavily weighted in the direction of asthma, skin diseases, upper and lower gastrointestinal disorders, thyroid disease, coronary disease, hypertension and the peripheral vascular diseases, diseases in which, frequently, the emotions are specifically etiologically implicated.

The cases are all presented succinctly, and in a well organized manner, as given in the hospital staff meeting. A brief description of the staff meeting follows, then a discussion, identifying each speaker, and finally a brief comment. The discussions are obviously verbatim reports of the staff meetings, and the reader is given the immediate impression of several observers after they have heard the case presentation and then seen the patient. The discussions generally are concerned with diagnosis and treatment, with perhaps an unnecessary overemphasis on descriptive diagnosis per se. On the other hand one cannot quarrel with the excellent elaboration by the discussants of the personality dynamics in each case.

Preceding the case presentations is an excellent chapter by Dr. Avery D. Weisman on the "Doctor-Patient Relationship." The general practitioner or internist may learn here just what happens when he refers a patient to the psychiatrist—and he may read it to clarify what happens when he treats patients—psychiatric or otherwise. There is also a preliminary chapter outlining in elaborate detail the neuroanatomic pathways of the brain probably concerned with emotional reactions. One wonders why this section was included in a collection of cases of psychosomatic disease.

As a whole the book presents a varied and interesting group of well-reported and critically discussed cases, but might have been better titled "Case Histories in Collaborative Psychiatry."

SURGERY AND THE ENDOCRINE SYSTEM—Physiologic Response to Surgical Trauma; Operative Management of Endocrine Dysfunction. James D. Hardy, M.D., F.A.C.S., Assistant Professor of Surgery, University of Tennessee Medical College. Illustrated. W. B. Saunders Company, Philadelphia, 1952. 153 pages, $5.00.

With the appreciation of surgical operation as a stimulus initiating a "stress" response on the part of the patient, it is natural that several surgeons have turned their attention to the components of this response and its significance to body economy. The endocrine system has come to occupy an increasingly significant role in surgical care, and it is nice to have available a small, compact, yet enlightening, volume on this subject. This book will serve to consolidate many scattered and fragmentary opinions about the biologic response to injury and knit them together into a useful and clearer picture of this new and rapidly expanding field.

The first few chapters in the book attempt to clarify the mechanism of the response of the organism to surgical operation. Basic physiologic concepts are emphasized, and a tremendous number of articles have been reviewed by the author to lay the background for the integrated picture presented in the first six chapters. The preeminent roles of the adrenals, thyroid, and pituitary in the surgical response to stress are elucidated. The relationships of the endocrine system to burns, early ambulation, infection, and neoplasia are briefly discussed. Half of the book is given over to these chapters which will serve to review for the clinician many of the fundamental advances in endocrinology of the past ten years.

The second half of the book comprises another five chapters in which the surgical problems of each endocrine organ are discussed from the clinical standpoint. Diagnosis and treatment are given in modern terms to disorders of the thyroid, parathyroid, islets of Langerhans, adrenal cortical and medullary tumors, and lesions of the pituitary, thymus, and gonads.

The book contains several excellent diagrams illustrating the interplay of the various hormones in surgical metabolism. Charts are also helpful in fixing the discussions of the text clearly in the mind, and also providing rapid sources of information when reviewing material in the book.

The book is simply and clearly written and illustrated and will be particularly valuable to the clinician who wishes to rapidly review the advances in surgical endocrinology of the past ten years. The entire book can be read with profit in the course of several hours, and it is particularly appropriate as a background for future developments in the field.

* * *

ALLERGIC PRURITUS—Its Dermatologic Management. Stephan Epstein, M.D., Editor. Bruce Publishing Company, St. Paul, Minn., 1952. 76 pages, $2.50.

Pruritus is second only to pain in the distress it produces. In fact, some patients who have suffered from both have maintained that severe pruritus is more unbearable than pain. This is partly because we have much better agents for relieving pain than we have for relieving pruritus. Moreover, physicians have been much better instructed in the treatment of pain than in the management of pruritus. Therefore, this symposium on allergic pruritus, edited by Stephan Epstein, is a welcome one.

The presentation is authoritative, concise (76 pages) and practical. The essayists have done well in attempting to reconcile the often conflicting views of the allergist, the psychosomaticist and the dermatologist. The photographs could be improved.

A TEXTBOOK OF ORTHOPEDICS—With a Section on Neurology in Orthopedics. M. Beckett Howorth, M.D., Clinical Professor of Orthopedic Surgery, New York Post-graduate Medical School. W. B. Saunders Company, Philadelphia, 1952. 1,110 pages, $16.00.

There has been a real need for a good text book of orthopedic surgery in the American literature for many years. The old classics were excellent in their time, but they have not kept abreast of progress. This new text does fill a need in that sense. Portions of it are excellent. Perhaps in an effort to simplify the subject for students and interns, certain other sections, particularly in the early portion of the book, could be eliminated or improved by revision.

After the first three hundred pages, when the text veers to the description of various and congenital and acquired orthopedic deformities, the picture changes and the book becomes excellent. The section on congenital deformities is beautifully illustrated and there is ample information contained for the student and the practitioner of orthopedic surgery. The discussion of vascular disease is quite complete, including a discussion of differential diagnosis which perhaps has been lacking in older texts many times. The discussion of metabolic and endocrine diseases is excellent. The discussion of tumors is concise, accurate and affords a ready summary of this entire problem for the reader.

The inclusion of a separate section on neuro-anatomy and neurology has certainly been needed in a text of this type. This particular section of the book is one of its best attributes.

Throughout the book there is an excellent choice of illustrations and diagrams, but perhaps the more valuable contribution is the inclusion of recent and classic references to the literature.

In summary, therefore, the book starts slowly but gains momentum as one reads through it. It is the best text of orthopedic surgery available on the American market at the present time and, although its value may be spotty in the early portions of the book, the vast proportion of its content is of such value that it should be recommended highly to anyone interested in this particular subject.

* * *

THE DIAGNOSIS OF NERVOUS DISEASES—10th Edition. James Purves-Stewart, K.C.M.G., C.B., M.D. Edin., F.R.C.P., Consulting Physician to Westminster Hospital, and C. Wormster-Drought, M.A., M.D., Cantab., F.R.C.P., Physician to the West End Hospital for Nervous Diseases. The Williams and Wilkins Company, Baltimore, 1952. 962 pages, $10.00.

The first hundred-odd pages of this standard textbook of neurology are devoted to a clear exposition of neuroanatomy and physiology. It departs from the usual practice in that there is no detailed treatment of the neurological examination gathered together in one place; rather the elicitation of significant signs is considered in the discussion of the various disease entities. The general style of the book is very pleasing; it can be read with pleasure for a survey of the whole field as well as being well indexed as a reference work.

There is adequate consideration of the special diagnostic techniques, such as electroencephalography and electromyography. The illustrations are well chosen and excellently reproduced. Case histories are used to illustrate the various syndromes. References to the literature appear at the bottom of the page rather than being collected at the end of chapters, a good device. This is probably the most satisfactory of the one-volume texts for both medical student and physician; it will certainly be found in the library of the neurologist.

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Operations on the Adrenal Glands

WILLIAM P. LONGMIRE, JR., M.D., and WILEY F. BARKER, M.D., *Los Angeles*

• *Various conditions of the adrenal gland are amenable to surgical treatment. Removal of a pheochromocytoma is almost always indicated when the tumor is diagnosed. The results of extirpation have been excellent in cases in which patients were operated upon before the onset of chronic hypertension. Removal of the "nerve cell" tumors of the adrenal is indicated if metastasis cannot be demonstrated.*

Hypofunction of the adrenal cortex may be partially alleviated by the repeated implantation of pellets of desoxycorticosterone acetate. Hyperfunction of the adrenal cortex causes a variety of clinical manifestations depending upon which of the numerous hormones are affected. Removal of a cortical tumor alleviates these symptoms. These tumors are malignant in more than 50 per cent of cases, and recurrence is frequent. Bilateral hyperplasia of the glands rather than a tumor may be present. In such circumstances, resection of 95 per cent of the adrenal tissue is effective in controlling the symptoms of the disease.

Total bilateral excision of the adrenals is, at present, under investigation as a means of treatment for a variety of conditions.

INCREASED KNOWLEDGE of the normal functioning of the adrenal gland has assisted in the recognition of abnormal conditions which attend diseases of the gland; and, with better understanding of the action of the cortical hormones, substitution therapy has been so greatly improved that possible indications for total excision of the gland are, at present, under investigation.

Both anatomically and physiologically the adrenal gland is two organs combined into one. Both are functionally related to the defense of the body against stress. A number of years ago, Cannon emphasized the importance of the physiologic effects of the adrenal medullary hormone, epinephrine, to the immediate reaction of the body to stress. Among the effects he mentioned were elevation of the blood pressure, vasoconstriction, and tachycardia. More recently, Selye and others elucidated the important role of cortical hormones in the alarm reaction.

A further interrelation of these two components of the adrenal gland in the alarm reaction is demonstrated by the fact that hyperactivity of the medulla and the resulting increased production of epinephrine stimulates hypothalamic centers and the hypophysis to elaborate adrenocorticotropic hormone and to maintain hyperactivity of the adrenal cortex.

At present, removal of tumors of the adrenal medulla is the only well recognized indication for op-

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Chairman's address: Presented before the Section on General Surgery at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

From the Surgical Service, Veterans Administration Center, Wadsworth Hospital, and the Department of Surgery, School of Medicine, University of California at Los Angeles.

Reviewed by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions of the authors are the result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

eration on this portion of the gland. The kind of tumor that most often originates at that site is pheochromocytoma. Although such tumors may arise from chromaffin tissue in a number of sites, most frequently they start in the adrenal gland.

Richards and Hatch[20] found that in approximately 10 per cent of the reported cases of pheochromocytoma, the tumor was outside the adrenal gland. Fifty-five per cent of the extra-adrenal tumors were in the region of the organ of Zuckerkandl at the base of the inferior mesenteric artery, 15 per cent near the hilum of the kidney, 10 per cent were para-aortic and were in the region of the pancreas and superior mesenteric artery, and 20 per cent were inside the thorax in association with the sympathetic ganglia there. Multiple tumors were reported in approximately 10 per cent of all cases.

According to Graham,[9] pheochromocytomas were noted in 0.4 per cent of 1,700 patients undergoing thoracolumbar sympathectomy for hypertension. These tumors seem to occur with equal frequency in the two sexes, and any age group may be affected. However, few cases have been reported in patients over 60. Symptoms are known to have started in one patient at the age of seven years. Coulston[6] and Calkins[7] noted the occurrence of these tumors in more than one member of the same family.

The tumors are reddish brown, have a fibrous capsule, and are richly supplied with blood vessels. Pronounced enlargement of the adrenal vessels to the involved gland is usually present. Additional blood vessels may enter the tumor through any area of the capsule. Microscopically the tissue of the tumor resembles that of the adrenal medulla. It consists of groups of irregularly shaped cells connected by vascular channels. The cells vary greatly in size and shape, and multiple nuclei and vacuolization of the cytoplasm are common. Mitotic figures are not numerous. The chromaffin reaction is positive, but the intensity of the reaction varies from tumor to tumor. Malignant pheochromocytomas are infrequent. The tumor grows slowly, neither invading surrounding structures nor metastasizing.

The clinical symptoms associated with these tumors result from an increase in circulating epinephrine and norephinephrine in the blood stream and typically appear in discrete attacks. Paroxysmal hypertension with associated tachycardia, sweating, blanching, and other vasomotor phenomena, headaches, general nervousness, and occasionally pulmonary edema are the most characteristic symptoms. Hypermetabolism due to thyroid disease may be suspected. The hypertension may become chronic and in such cases differentiation from "essential hypertension" may be difficult. The induction of a typical paroxysm by the intravenous injection of 0.05 mg. histamine base[21] is probably the most specific diagnostic test. In the presence of chronically elevated blood pressure, however, the use of adrenolytic drugs such as benzodioxane[8] and Regitine®[11] has been reported valuable. All these tests are potentially dangerous; few undesirable reactions have been encountered with Regitine, however. In the presence of fluctuating hypertension several adrenolytic tests should be performed for accuracy of diagnosis.

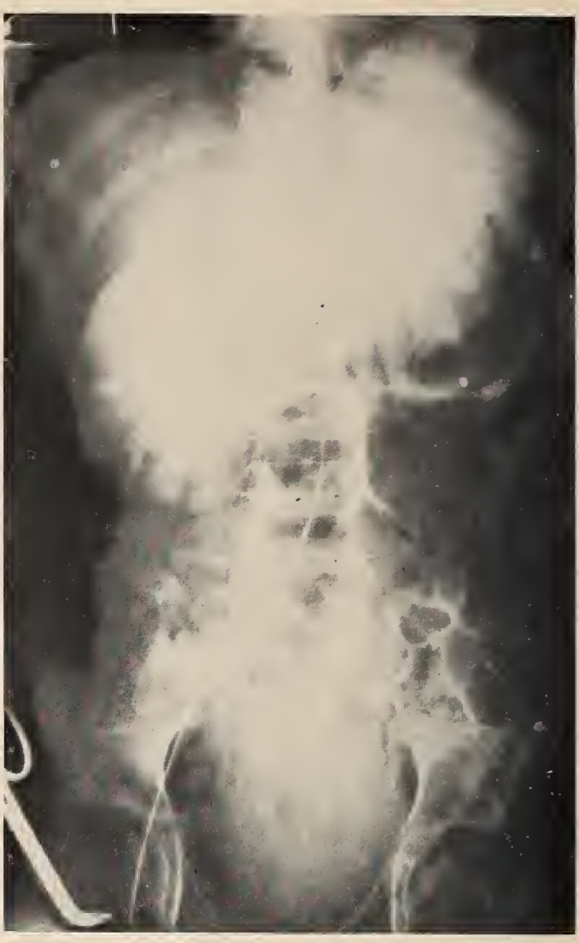

Figure 1.—Aortogram demonstrating pheochromocytoma in the right suprarenal area. (The authors wish to express appreciation to Dr. Willard E. Goodwin and Dr. Elmer Belt for this illustration.)

When such a tumor is suspected, special x-ray techniques may be useful in localization. A plain film of the abdomen may demonstrate a mass or calcification in the tumor. Intravenous pyelograms may indicate displacement of a kidney or ureter. A mass not revealed by other techniques may be outlined by the retroperitoneal injection of oxygen. Vascular tumors may be demonstrated by the injection of radiopaque solution into the aorta proximal to the

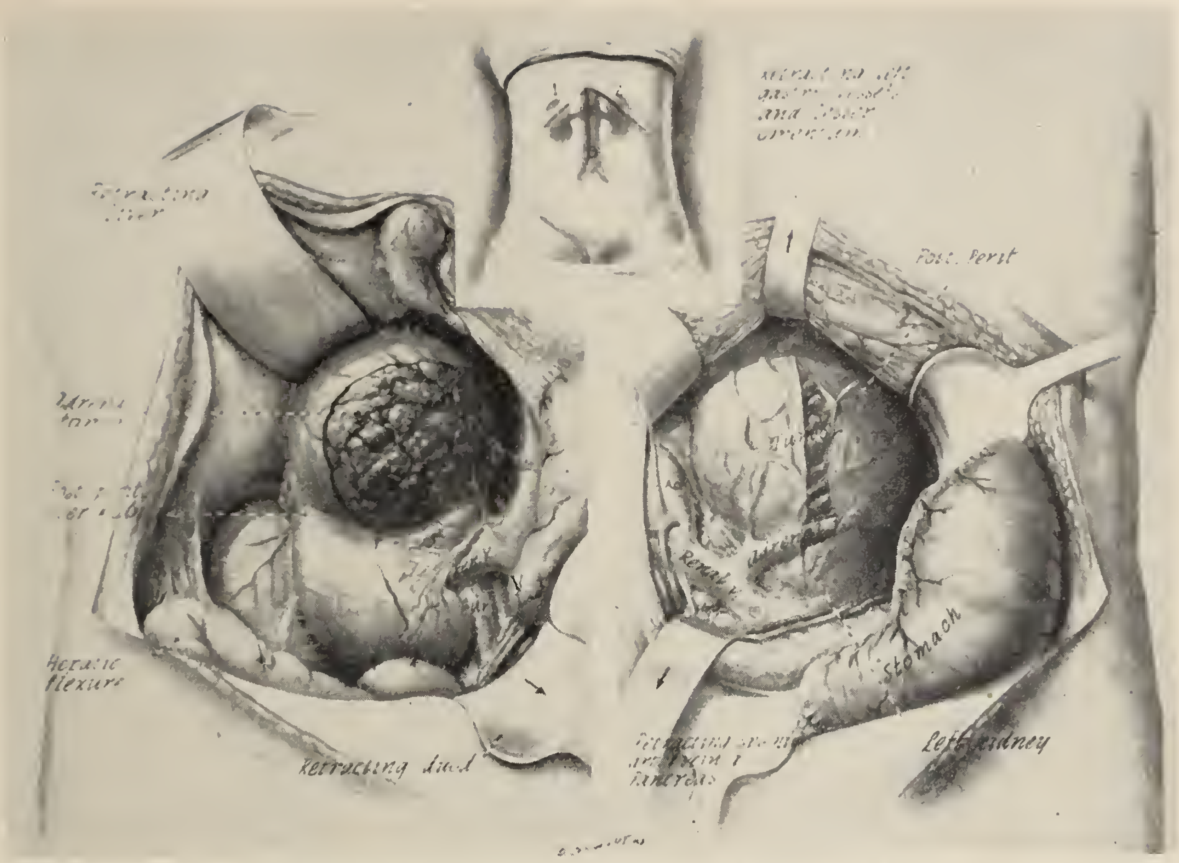

Figure 2.—Exposure of the adrenal area through the transverse upper abdominal incision. *Left*, a tumor in the right suprarenal gland. *Right*, a tumor in the left suprarenal gland.

origin of the renal vessels. Simultaneous retroperitoneal oxygen injection and aortography have been infrequently used but are of value (Figure 1).

Graham[9] collected reports of 72 untreated patients who died with pheochromocytoma and noted that 19 died of cerebral vascular accidents, 15 of cardiac failure, and 9 of "an attack." The remaining 29 died of miscellaneous or unknown causes, but 20 of the miscellaneous causes appeared to have some relation to the tumor.

Surgical removal of the tumor is the only effective method of treatment. Following extirpation of tumors in cases of chronic hypertension, lowering of blood pressure may be less dramatic than it is in other cases because of secondary renal and vascular changes. Prior to operation general supportive measures are indicated. Paroxysms are controlled with benzodioxane, dibenamine, Priscoline,® or Regitine.®[11, 5] Digitalization may be indicated.

The anesthesia of choice is probably Pentothal® induction and endotracheal ether, and utmost care should be given to maintaining adequate oxygenation.[5, 1] A lumbar incision of the type usually employed for exploration of the kidney has been used by the majority of surgeons. However, a long transverse upper abdominal incision permits inspection of both adrenal glands and other common intra-abdominal sites where tumors may occur.[13] (See Figures 2 and 3.) This approach permits ligation of the main vascular pedicle before manipulation of the tumor. Benzodioxane and Regitine® should be immediately available for injection during the operative procedure if pronounced elevation of the blood pressure occurs. Injection of norepinephrine or Neo-synephrine® is usually indicated for treatment of hypotension following removal of the tumor. Supportive adrenal cortical therapy may be indicated for two or three days following operation.[9, 5, 1]

The operative mortality rate associated with the removal of suspected pheochromocytoma is still between 10 and 20 per cent. A mortality rate of 50 per cent attends operations when the presence of such a tumor is not suspected preoperatively.[1] A permanent cure or pronounced alleviation of hypertension is the usual result.[20] The possible presence of multiple tumors should be strongly suspected when extirpation of a single tumor does not relieve hypertensive paroxysms.

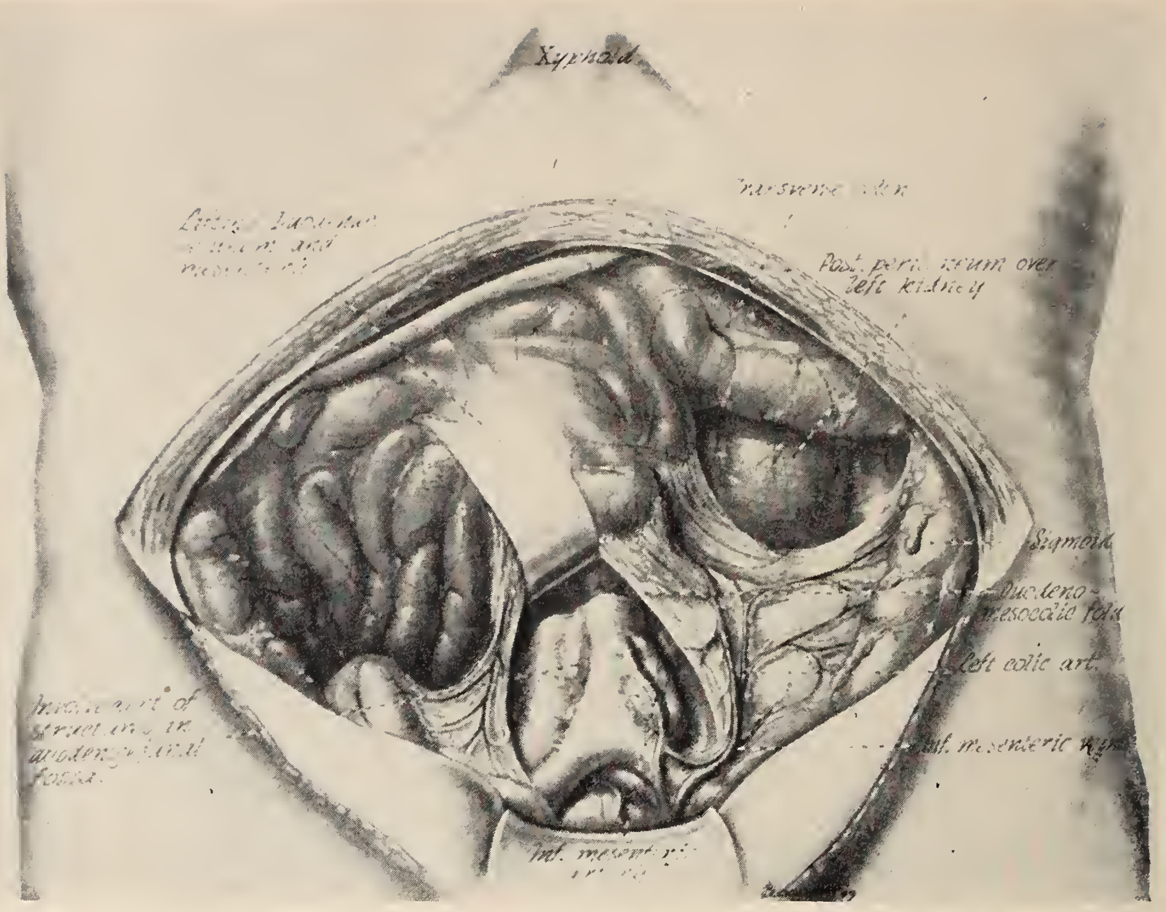

Figure 3.—Exposure of the inferior aorta and aortic bifurcation through the transverse upper abdominal incision.

The nerve cell tumors neuroblastoma and ganglioneuroma occur most frequently in the adrenal glands or in the ganglia of the sympathetic chain. They are among the most frequently occurring abdominal neoplasms of infancy and childhood. Unfortunately attention usually is not directed to these nonfunctioning tumors until after they have reached sufficient size to be readily palpable or visible or metastases have developed, and although the grade of malignancy varies considerably, the prognosis is very poor.

Excision of the adrenal medulla for peripheral vascular disease with gangrene has been proposed by European surgeons,[17, 2, 15, 16, 4] who have reported that results are good in approximately 50 per cent of patients. The authors' experience with the procedure has been meager and unfavorable.

THE ADRENAL CORTEX

Adrenocortical insufficiency may be either acute or chronic. In the chronic cases, the subcutaneous implantation of pellets of desoxycorticosterone acetate is usually indicated in addition to the oral administration of cortisone.

Hyperfunction of the adrenal cortex may result from a tumor or from generalized hyperplasia without a tumor. This condition may occur at any age but it is most common in childhood or in persons under 40 years of age. Females are more frequently affected than males. Multiple clinical symptoms based on hypersecretion of some combination of the 27 or more known cortical hormones may be present.

Commonly observed are cases in which the manifestations are adrenogenital, predominantly androgenic, with or without disturbance in production of cortisone-like substances. Characteristic changes include hirsutism, masculine distribution of hair and enlargement of the larynx, masculinization with hypertrophy of the clitoris or penis, increased somatic growth without the "buffalo hump," a positive nitrogen balance, and increased excretion of 17-ketosteroids. Diabetes is absent and hypertension may or may not be present.

Cushing's syndrome is characterized by hypertension, plethora, retention of the sodium and chloride ions, osteoporosis, muscle weakness, negative nitrogen and potassium balance, and cutaneous atrophy with the presence of striae. There is an odd distribution of fat with the characteristic "buffalo hump" and "moon face." Diabetes which is frequently present responds poorly to insulin. Excretion of 11-oxycorticosteroids is increased and is considered a reflection of the presumed increase in production of corticoid hormones. Excretion of 17-ketosteroids may be either unchanged or very slightly increased. Essentially no masculinization is present, and the clitoris and larynx are of normal size.

Various combinations of these two types of syndromes occur frequently.

Feminization syndromes in the male are very uncommon. Non-secretory adenomas or carcinomas may occur and are usually recognized only after they have become large.

In the differential diagnosis it should be borne in mind that the clinical features of Cushing's syndrome may be produced by the administration of cortisone and corticotropin (ACTH). Similar phenomena, usually mild, may be produced by large doses of salicylates, apparently through stimulation of the hypothalamic nuclei. Mild clinical signs of Cushing's syndrome are also rarely associated with the presence of a pheochromocytoma or of a tumor of the thymus. Functional tumors of the adrenogenital ridge which arise from cells having the same origin as adrenal cortical cells may produce a clinical picture identical with that of a cortical tumor. These tumors frequently occur in the ovary, but they may lie elsewhere. Heinbecker[12] associated atrophy or inhibition of the supraoptic or paraventricular nuclei of the hypothalamus with generalized adrenal hypertrophy as an etiological factor in cases in which no neoplasm is present.

If there is no palpable mass, techniques for localization of cortical tumors are the same as those discussed for pheochromocytomas.

The patients, particularly those with a predominating Cushing's syndrome, are poor operative risks, and careful preoperative preparation is indicated. Shock or any alarm stimulus is poorly tolerated. The tissues are depleted of nitrogen, and healing proceeds slowly. Postoperative wound infection is common.

Intravenous administration of sodium chloride and glucose, increased oral potassium intake, the administration of testosterone, and a high protein, high carbohydrate, high caloric diet are essential in the preparation of the patients. Priestley[19] recommended the injection of 40 cc. of adrenal cortical extract the evening before operation and immediately before operation in an attempt to avoid the collapse which frequently follows adrenal extirpation.

A long transverse upper abdominal incision permits inspection of both adrenals. A tumor on either side may be removed through this approach. As the incidence of malignant change in these tumors is roughly 50 per cent,[22] the entire ipsilateral gland should be removed when any tumor is present.

If bilateral hyperplasia rather than a tumor is found, recommendations as to treatment vary. Priestley,[19] who uses a bilateral posterior approach, recommended the following plan of treatment. If the first gland exposed is atrophic, the incision is closed and the opposite side explored for a tumor. However, if the gland on the first side is normal or hyperplastic, 90 per cent of it is resected. If a tumor is found on the side explored last, it is removed. If not, the entire gland is removed and the remaining 10 per cent of the contralateral gland is relied upon to provide adequate adrenal function.

Endocrine changes caused by benign tumors should be completely alleviated by this procedure. Pack and Livingstone[18] reported a survival rate of only 2 per cent ten years after treatment of adrenal carcinoma. In the presence of hyperplasia, Priestley[19] reported six deaths in 29 cases, good results in 19. Of the 19, three had some recurrence of the previous condition, and three had some degree of cortical insufficiency.

Other conditions for which the use of bilateral adrenalectomy is, at present, under investigation include carcinoma of the prostate,[14] hypertension,[10, 24] and malignant melanoma.[3] The results of adrenalectomy in such conditions are still in question. The problem of long-term substitution therapy must be considered in evaluating the results of any total adrenalectomy, and such procedures should be considered only when facilities are available for complete study and care both before and after operation.

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NATURE NOT ONLY points out the food proper for infancy, but also kindly prepares it. When the little inhabitant is ushered into this cold world, if applied to the maternal bosom, its sense of perceiving warmth is first agreeably affected; next, its sense of smell is delighted with the fragrance of the dulcid rill; then, its taste is gratified by the flavor of it; afterward, the appetite of hunger and thirst afford pleasure, by the possession of their objects, and by the subsequent health of the infant; and lastly, the sense of touch is delighted by the softness of the lactary fountain, which the innocent embraces with its hands, presses with its lips, and watches with uplifted eyes. Satisfied, it smiles at the enjoyment of such a variety of rich pleasures. It feels an animal attraction, which is love: a sensation when the object is present, a desire when it is absent; which constitute the purest source of human felicity.

—Ball, Isaac: An Analytical View of the Animal Economy.
New York: G. J. Hunt, 1808

Coxsackie Viruses

A Review of Pathologic, Epidemiologic, Diagnostic and Etiologic Observations

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• *Coxsackie disease comprises three clinical entities—herpangina, so-called non-paralytic poliomyelitis, and epidemic pleurodynia. Several strains of antigenically-related viruses, Groups A and B, designated as Coxsackie virus have been isolated from stool specimens and from material from the throat of many patients with the diseases mentioned. Inasmuch as the virus has also been recovered from normal persons, there is as yet uncertainty as to causal relationship between the presence of the virus and the disease. Reports of the isolation of Coxsackie virus and poliomyelitis virus from the same patient make difficult the interpretation of the findings.*

The diagnosis of Coxsackie disease entails animal inoculation and serologic procedures. Emphasis is placed on the necessity of obtaining stool specimens, throat washings, and "paired" blood specimens from patients suspected of the disease.

One of the most recent and important observations in virology was the discovery of Coxsackie or "C" viruses by Dalldorf and Sickels in 1948.[6] Epidemiologic studies on poliomyelitis in Coxsackie, N. Y., an urban community in the Hudson River Valley, led to the observation of the new virus in stool specimens obtained from two boys with nonparalytic poliomyelitis. In Wilmington, Del., in the same year, Dalldorf noted a similar virus in stool specimens obtained from a group of patients with symptoms of atypical poliomyelitis. Approximately two years later, Melnick, Shaw, and Curnen[18] reported the isolation of the virus not only from patients, but from flies and sewage. They also described six cases of accidental laboratory infection among personnel working with the virus.

In 1950, in England, Findlay and Howard[9] observed a virus in the stools of patients with a disease entity designated, in that country, as epidemic pleurodynia or Bornholm disease. The virus has now been identified as Coxsackie virus. Another significant observation was that of Huebner, Cole, Beeman, Bell, and Peers,[12] who isolated Coxsackie virus from patients with herpangina. Thus, within a period of four years, Coxsackie viruses have been isolated from patients with three seemingly unrelated symptom complexes.

THE VIRUS

Coxsackie virus is extremely small, ranging in size from 10 to 20 millimicrons.[13, 22] It has been propagated in tissue culture[25] and in embryonated eggs.[6] It is resistant to antibiotics such as penicillin, streptomycin, and chloramphenicol. The best source of the virus is feces collected from patients early in the course of the disease. It has also been isolated from stools, from throat swabs and rectal swabs. One investigator reported observing it in spinal fluid, blood, and urine.[11]

Many strains of the virus have been noted and, on the basis of histologic examinations carried out on experimentally-infected suckling mice, two distinct groups, A and B, have been identified. Group A strains produce myositis in skeletal muscles, and Group B strains cause not only myositis but, also, encephalomyelitis, myocarditis, pancreatitis, hepatitis, and inflammatory lesions in fat pads. Reactions to complement-fixation and neutralization tests also confirm the existence of the two groups. Furthermore, there are several different types of Coxsackie virus in each group. The viruses produce paralysis in both suckling mice and hamsters, and cause a mild febrile illness in young cynomologous monkeys and in chimpanzees. Minute cytoplasmic fuchsinophilic granules have been observed in lesions produced in suckling mice.[21] Although suckling mice are most susceptible to the virus, it was noted recently that pancreatitis developed in adult mice that ate infected suckling mice.[15]

The Coxsackie viruses are widely distributed, yet overt illness is comparatively uncommon. To date, isolation of Coxsackie viruses has been reported from at least 24 states: Alabama, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Louisiana, Maryland, Massachusetts, Minne-

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sota, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Virginia, Washington, Wisconsin.* The disease has been reported from England, Canada, Denmark, France, Israel, and Alaska.[1, 9, 10, 17, 24, 27]

Man is evidently the chief reservoir of infection. Recently, however, Morris and O'Connor[20] noted that the serum from wild cottontail rabbits (Sylvilagus floridanus) trapped in Maryland neutralized three strains of Group A Coxsackie viruses. The epidemiologic significance of this finding is as yet unknown. Serologic surveys in man indicate that many persons have been exposed to the infection, yet to their knowledge have not had Coxsackie disease. Such evidence indicates that inapparent infections occur, as has been noted in poliomyelitis. Although the majority of patients from whom viruses are recovered are under ten years of age[7] they have been obtained from numerous patients in the second decade of life. Dalldorf observed that the disease more often affected boys than girls, but Cole, Bell, Beeman, and Huebner[4] noted no significant difference in this regard. The disease is most prevalent in the late summer and early fall months, as is poliomyelitis.

Coxsackie disease may occur in several members of a family. Close contact is conducive to transmission of the infection. Infection may result from contact with persons who have asymptomatic cases, with persons in whom the disease is clinically apparent, or from carriers. Cole, Bell, Beeman, and Huebner[4] were able to isolate the virus from the stools of one patient with herpangina for 76 days after the onset of illness. They stated, however, that usually it cannot be recovered for more than one month after first symptoms are observed.

CLINICAL MANIFESTATIONS

The symptoms of the disease complexes vary greatly. They include those of nonparalytic poliomyelitis and aseptic meningitis; epidemic pleurodynia or Bornholm disease; and herpangina or vesicular pharyngitis (see Table 1).

Nonparalytic poliomyelitis and aseptic meningitis. After an incubation period of from one to four days patients complain of malaise, anorexia, nausea, headache, muscular pains, and weakness, especially in the legs. Stiffness of the neck is a conspicuous symptom. Temperature of from 100° to 104° F. may persist during the first week of the illness. In many instances, the illness is heralded by symptoms of infection in the upper respiratory tract. Muscle weakness occasionally can be detected. Pleocytosis in the cerebrospinal fluid is frequently observed in this form of the disease.

TABLE 1.—*Clinical Entities from Which Coxsackie Viruses Have Been Isolated*

Clinical Entity	Group A	Group B
Aseptic meningitis		+ *
Fever of unknown origin		+
Herpangina	+	
Non-paralytic poliomyelitis	+	+
Pleurodynia	+	+
Poliomyelitis	+	+
Respiratory infections	+	+
Summer grippe		+
Three-day fever	+	
Normal	+	

* +Indicates isolation of virus.

Epidemic pleurodynia (Bornholm disease). The symptoms that occur at the onset of this clinical entity are not unlike those observed in several viral diseases—namely, headache, fever of from 101° to 104° F., nausea, vomiting, pain in muscles of the extremities, backache, and stiffness of the neck.[9, 16] Sore throat is not uncommon. The striking symptoms, however, are pains in the chest and abdomen which cause severe distress in the patient and account for the designation of "devil's grippe" or epidemic pleurodynia. The term *Bornholm disease,* used by the English, derives from Bornholm Island in the Baltic Sea.

Herpangina or vesicular pharyngitis. In 1920, Zahorsky[29] described herpangina as a clinical entity of unknown cause. The disease is characterized by fever, headache, abdominal pain, and a sore throat. Early in the course of the disease the only clinically observable change in the throat is diffuse congestion. From 12 to 24 hours later, small petechiae may be noted about the fauces, and later they develop into vesicles and finally into aphthous areas. The disease usually lasts four or five days, and the patient then makes uneventful recovery. Huebner, Cole, Beeman, Bell, and Peers,[12] in 1951, reported isolation of Group A strains of Coxsackie virus in material from throat washings and rectal swabs and in the stools of 32 of 37 patients with herpangina. They noted that the disease was prevalent in the metropolitan area of the District of Columbia. The disease has since been observed by numerous physicians in other areas of the United States. Recurrence of the infection in the same patient has been reported.[4]

DIAGNOSIS

The clinical diagnosis of Coxsackie disease is difficult. It may be suspected in young children with symptoms of so-called nonparalytic poliomyelitis, especially when the outstanding symptom is stiffness of the neck. The disease may also be suspected in unexplained concurrent severe chest and abdominal pain. In herpangina, the presence of vesicles about the fauces is characteristic. The cardinal symptoms already mentioned are usually accompanied by headache, nausea, fever and muscular pain. A definite diagnosis, however, can be made only in the laboratory. The isolation of Coxsackie virus from the stool of a patient, or from material from the throat swabs in the case of herpangina, is diagnostic if the presence of other infectious agents causing symptoms similar to those caused by Coxsackie virus cannot be demonstrated. In addition to demonstrating the virus, a rise in titre of neutralizing antibodies or complement-fixing antibodies should be observed. The specimens required by the laboratory are: (1) A stool specimen obtained early in the course of the disease; (2) from patients with herpangina, specimens of material washed or swabbed from the throat, kept moist in a serum broth. (3) Two specimens of blood (10 ml. each), the second obtained approximately two weeks after the first.

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*References: 2, 3, 5, 6, 11, 14, 16, 18, 19, 23, 25.

Demonstration of the virus in stool specimens is comparatively simple. An inoculum is prepared from the specimens by making a 20 per cent suspension in distilled water. The suspension is ground in a Ten Broeck grinder, then centrifuged at 2° C. for one-half hour at 13,000 rpm. The supernate is removed and exposed for one-half hour at room temperature to 1,000 units of penicillin and 10.0 mg. of streptomycin per milliliter. Three-hundredths of a milliliter of the inoculum is injected intramuscularly, intraperitoneally, or intracerebrally into suckling mice from one to two days old. Observations are then made for paralysis of the extremities, particularly the posterior limbs. If the virus is present in the inoculum, paralysis and death usually occur within five days after inoculation. The presence of the virus is determined by histologic examination of sections of the infected mice, and by neutralization and complement-fixation tests. (A large breeding colony of mice to supply suckling mice is an essential requirement.)

Routine complement-fixation tests on serum from patients for the diagnosis of Coxsackie disease are yet impractical because of the multiplicity of strains of the virus. On the other hand, serologic tests by means of complement-fixation and neutralization procedures are useful to detect a rise in antibody titre in the serum of a patient from whom the virus has been recovered. Thus "paired" specimens of blood from patients suspected of Coxsackie disease are essential.

RELATIONSHIP OF THE VIRUS TO DISEASE

The relationship of the group of Coxsackie viruses to the diseases from which they have been isolated is not definitely known (Table 1). Cole, Bell, Beeman, and Huebner[4] expressed the opinion that herpangina is definitely caused by Group A strains of Coxsackie virus. They noted the presence of the virus in 45 of 50 cases of typical herpangina. On the other hand, they expressed belief that the presence of the virus in the stools of patients who had the other clinical diseases thought by some observers to be caused by Coxsackie viruses might be only incidental. The etiologic significance of the virus in nonparalytic poliomyelitis has been critically evaluated by several investigators, particularly by Cole, Bell, Beeman, and Huebner,[4] who noted in a survey of the literature and of their own material. that the virus was observed to be present in from 170 (9.6 per cent) of a total of 1,763 cases. The cases were classified into two groups—namely, 701 cases of poliomyelitis and 1,062 cases of nonpoliomyelitis. Coxsackie virus was present in 10.3 per cent of the cases of poliomyelitis and in 9.2 per cent of the other group, indicating no significant difference between the two groups with regard to the percentage of patients carrying the virus.

Experimental evidence that Coxsackie virus is the cause of epidemic pleurodynia was reported, however, by Findlay and Howard[9] who observed symptoms typical of Bornholm disease in an adult volunteer who was inoculated intranasally with the virus. Later, specific complement-fixing antibodies were demonstrated in serum from the patients. In addition, two groups of investigators isolated Coxsackie virus from patients in epidemic areas. Weller, Enders, Buckingham, and Finn,[28] and Lazarus, Johnston, and Galbraith[16] recovered the virus from the stools of a high percentage of patients with epidemic pleurodynia.

Inasmuch as the viruses of poliomyelitis and Coxsackie disease have been recovered from the same patient, it has been postulated that the Coxsackie viruses have a "sparing" effect on the virus of poliomyelitis. Experiments were carired out by Sulkin and Manire[26] to determine the effect of simultaneous inoculation of animals with both viruses. They observed that Coxsackie virus did not affect the course of poliomyelitis in mice, but that Lansing poliomyelitis virus favorably affected the course of Coxsackie disease in mice. Dalldorf[8] infected young mice with Group B Coxsackie virus, and then with poliomyelitis virus from four to ten days later. The animals acquired pronounced resistance to the poliomyelitis virus.

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Treatment of Pain and Neuromuscular Tension

A Report on Intravenous Use of Tetracaine in 365 Cases

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• *Three hundred and sixty-five patients were given tetracaine intravenously for various types of pain and neuromuscular tension. In the treatment of pain, myositis, muscle spasm, and visceral spasm most patients were relieved. Best results were obtained in syndromes in which pain was associated with muscle spasm, such as in pain in the lower part of the back and scalenus anticus syndromes. The effects of tetracaine intravenously are those of analgesia, vasodilatation, and relaxation of spastic muscle. Sixty-five of the patients were treated for neuromuscular tension, and there was good relaxation and increased comfort. Alcoholics were relieved of some of the tension symptoms and may have been helped to resist the desire to drink. Of 14 patients with premenstrual tension, 13 had complete relief. Eight patients with mixed anxiety and tension states also responded well.*

Toxic and allergic reactions were negligible, and other side effects were infrequent and of no consequence.

THIS IS A REPORT of a three-year study of the intravenous use of tetracaine in the treatment of pain and neuromuscular tension. Over fifteen hundred injections were given by the author and others. The study was carried out in a leprosarium, an industrial clinic, a neuropsychiatric residency, and in private practice. Tetracaine,* a local anesthetic drug of the procaine series, has been widely used as a spinal and topical anesthetic. Compared with procaine, it has a longer duration of action and a more profound anesthetic effect. As procaine was known to be an effective drug for intravenous use in the treatment of various kinds of pain, it seemed logical to use tetracaine, as its higher potency would make possible the use of smaller amounts that could be administered by a syringe instead of with a flask and tubing as was required with procaine.

Local anesthetic agents have been used for many years in the treatment of pain. They have been used for blocking nerves, to interrupt the conduction of pain impulses, for the injection of so-called "trigger points," or points of maximum tenderness in a painful area, for infiltration of painful muscles and skin, and intravenously in the case of procaine. Results have been excellent in relieving pain, in increasing circulation in some types of ischemia, and in relaxing spastic muscle. Often an injection of a small quantity of a local anesthetic drug will break up a vicious cycle of pain of long standing and give complete and permanent relief.

When tetracaine is injected locally, it causes analgesia and relaxation of spastic muscles, and it acts as a powerful vasodilator. It can be given in concentrations less than one-tenth the usual concentration of procaine, with much longer duration of action, and with very slight toxicity and side effects.

Numerous animal experiments established the safety of tetracaine when injected intravenously. Lundy,[6] experimenting with dogs, noted that large amounts of tetracaine could be given intravenously before fatal effects were observed. In one dog, 150 mg. of tetracaine intravenously in five minutes did not alter blood pressure. In another, a total of 850 mg. was required to cause death. Hirschfelder[4] noted that tetracaine given intravenously to dogs decrease experimentally induced auricular fibrillation. Pfitzner[9] reported that tetracaine administered intravenously to animals was six times as toxic as procaine, but ten to twenty times as potent.

Moore[7] and Bonica[2] reported large series of nerve blocks done with tetracaine in humans, with excellent results. In the author's experience, the effect was good in over 400 nerve blocks and infiltrations. There is, however, in many physicians a great fear of tetracaine and a great reluctance to inject it. This fear seems to be based on the occurrence of accidents in cases in which tetracaine was used as a topical anesthetic in the mouth and throat. Owing partly to its powerful vasodilator effects, the drug seems to "explode" into the blood stream when applied to a mucous membrane without the addition of a vasoconstrictor. A number of deaths have occurred because of this attribute.

However, in a careful search of the literature, report of only one death following injection of tetracaine for nerve block was found, and in that instance the patient was a poor risk and hyaluronidase was

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Presented before the Section on General Practice at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

*Tetracaine used was Pontocaine,® supplied through the courtesy of Winthrop-Stearns Co.

mixed with the anesthetic agent.[8] It would appear that injecting this drug into tissues is much safer than spraying it on a mucous membrane. In view of the qualities mentioned, it seemed logical to try tetracaine intravenously in small quantities given slowly.

RESULTS

Two hundred ninety patients were treated for pain, and when many of them reported better sleep and relaxation following intravenous administration of tetracaine, the treatment was tried in 65 cases for relief of neuromuscular tension, not only in persons who were tense and unable to relax, but also in patients with neurological diseases such as multiple sclerosis for the treatment of uncomfortable muscle spasms, and for conditions such as the so-called scalenus anticus syndrome in which pain and muscle spasm are found together, operating in a vicious cycle. In ten cases, the drug was tried on patients with multiple sclerosis and amyotrophic lateral sclerosis. It had no effect on the neurological condition.

The dose given for relief of pain was 10 cc. of 0.25 per cent solution of tetracaine. Fifty of the patients were treated for pain in the lower part of the back, and in about 90 per cent of the cases there was almost complete relief after one injection of tetracaine intravenously. About half of the remainder were helped very little or not at all, and the rest had some improvement. Nine of ten patients with tension headaches and occipital neuralgia and six of eight patients with various kinds of pain in the chest had good results. Four patients had scalenus anticus syndrome or a variant of it, and all were relieved. The following case reports are illustrative:

Case 1: A 52-year-old white woman complained of pain in the right biceps and right hand which had become progressive over a period of three months. A neurosurgeon who examined the patient for rupture of a cervical intervertebral disk or tumor around the cervical spine said neither of these conditions was present. On palpation, the right anterior scalene muscle was extremely tender and felt spastic. Scalenus anterior syndrome was considered to be the cause of pain. The patient was given 10 cc. of 0.25 per cent tetracaine solution intravenously and pain was almost immediately relieved. Three days later some pain recurred. The injection was repeated with complete relief. There was no further recurrence.

Case 2: A white man 57 years of age had posterior myocardial infarction in May of 1950, with subsequent anginal pain so severe as to necessitate opiates for relief. In June of 1950 pain in both shoulders and both hands developed. Stellate ganglion blocks gave only temporary relief. Physical therapy for three months gave very little relief. In September definite symptoms of ischemia of the left arm and hand were noted, and the fingers of the left hand were held in painful flexion contracture. Bilateral anterior scalene tenderness was present. Ten cubic centimeters of 0.25 per cent tetracaine solution was given intravenously. The contracted fingers relaxed immediately and the hand and arm became definitely pinker. The patient said that the pain was much less. Five days later pain increased somewhat and a second injection was given. Pain abated completely and the patient was discharged from the hospital at his own request.

In general, the best results with intravenous administration of tetracaine were obtained when it was used for pain that had no specific mechanical cause, other than muscle spasm. Smooth muscle and skeletal muscle were relaxed by the treatment. Four of the patients in the series had bladder pain and spasm following cystoscopy or acute cystitis. All had complete relief after one intravenous injection. Three patients with pain and anal spasm following hemorrhoidectomy had considerable relief. One woman, aged 34, had endometriosis with considerable pelvic pain. Oophorectomy was advised, but the patient declined. Experimentally, 10 cc. of 0.25 per cent tetracaine solution was given intravenously, and the pain disappeared. It recurred in seven days. The treatment was repeated and injections were continued weekly for fifteen weeks. After the fifteenth intravenous injection the patient noted slight wheezing and a slight reddening of the skin at the site of venipuncture. The following week a skin test was carried out by the intradermal injection of 0.1 cubic centimeter of 0.25 per cent tetracaine solution. A wheal about 6 by 9 centimeters developed in fifteen minutes. It was assumed that the patient had acquired allergic sensitivity to tetracaine, and use of the drug was discontinued. The symptoms manifested in this instance were mild and transient and did no harm. The patient was the only one in the present series in whom sensitivity to tetracaine developed, and questioning elicited that the patient had pronounced sensitivity to a large number of drugs, foods, and vegetable substances.

In patients with a definite mechanical cause for pain, other than muscle spasm, intravenous use of tetracaine had no effect. Tetracaine was given intravenously to patients with rib fracture, osteomyelitis with sequestrum formation, terminal carcinoma, dislocations, brachial-plexus avulsion, and bursitis. It did not relieve pain. Nor did it relieve the pain of syringomyelia in one patient. Amputees with phantom-limb pain were not benefited. Where pain was limited to the distribution of a single sensory nerve, blocking that nerve gave much better results than the intravenous injection. Polyarthritis responded better to procaine given intravenously than to tetracaine. In dysmenorrhea the drug helped in about 50 per cent of cases. In migraine headache there was occasional improvement.

NEUROMUSCULAR TENSION

Of the 65 patients given tetracaine for relief of tension, 42 were alcoholics, 15 had premenstrual tension, and eight had various forms of anxiety and tension. The dose given was 20 cc. of 0.25 per cent tetracaine hydrochloride, twice the amount given for pain. It was effective in about 90 per cent of cases. Higher concentrations of tetracaine up to 0.5 per cent were tried in some instances, but there were no advantages, and as a side effect some patients noted a transient numbness of the lips and tongue. The alcoholic patients were generally tense, neurotic persons with a tendency to panic states. In some, tension seemed to build up until some trivial incident precipitated panic and compulsion to drink to escape from panic. With the use of tetracaine, the alcoholic patients were helped to relax, and, in some cases, the relaxation seemed to help the patient to resist the compulsion to start drinking. In the sobering period, after days or weeks of drinking without proper nourishment, the tetracaine was mixed with 50 per cent dextrose solution and Lyo B-C,* to relieve anxiety, tremor, and generalized discomfort which sometimes lead to recurrence of drinking. It is not possible to give any quantitative measure of the effect of intravenous tetracaine, since the craving for tension relief from alcohol is a subjective experience not measurable objectively, and any factors tending to modify the craving would also be subjective in effect. All the patients stated that they felt more relaxed and less panicky. In this small series, it is not possible to give an exact evaluation, but it was felt that the tetracaine, alone or in combination with glucose and vitamins was relaxing, and gave comfort in difficult periods.

Of the 14 patients with premenstrual tension, 13 had complete relief for the period in which the injection was given. One woman, who underwent a hypomanic paranoid phase before each menses, had relief for only four hours, after which symptoms recurred. In most, the relaxation was immediate, and euphoria took the place of tension.

The eight patients with anxiety and tension from various causes, had good relief, and in most subjects, one injection gave relaxation for as long as two months.

The larger dose did not interfere with coordination, judgment, or any function. Practically every patient was treated in the office, and after a rest of ten minutes was able to drive a car or return to work without mishap.

TOXICITY

Toxic effects and side reactions were negligible in over 1,500 intravenous injections of tetracaine hydrochloride.* As previously reported[5] one patient fainted and one had emesis immediately after injection. It was found that making the patient lie on the examining table for ten minutes following treatment prevented fainting. Occasionally, patients had ringing in the ears and/or dizziness for a few minutes after injection. This never persisted for more than ten minutes. At no time were sedatives, oxygen, or stimulants necessary. Headache developed several hours after treatment in about one per cent of patients.

Allergic reactions to tetracaine were not common. In addition to the one patient previously mentioned, in whom sensitivity developed after 15 injections, skin sensitivity reactions were noted in three others in the course of routine testing. In all three, nerve block was contemplated and, as a routine precaution, 0.1 cc. of tetracaine was injected intradermally. A skin wheal larger than 2 cc. in diameter was considered evidence of possible sensitivity, and a different anesthetic agent than tetracaine was used. In each case the only sensitivity reaction was the skin wheal, and it was only temporary. No development of tolerance, dependence, or habituation occurred. As much as 250 milligrams of the drug have been given in 1,000 cc. of isotonic saline solution, without the signs of toxicity.

TECHNIQUE

In all cases tetracaine hydrochloride in sterile isotonic solution was used. The concentration of maximum effect and least toxicity has been found to be 0.25 per cent, or 1:400, which is equivalent to 2.5 mg. per cc. This can be made up by adding the contents of a 250-mg. ampule of Pontocaine "Niphanoid" (marked *Not For Spinal*) to 100 cc. of sterile isotonic saline solution. A rubber-stoppered bottle is the best container, and enough of the solution for many doses may be kept for one or two weeks. *The tetracaine should not be dissolved in distilled water* because the solution thus made would be hypotonic and undesirable for intravenous injection, and probably not effective.

The patient must be lying on a bed or examining table during and immediately after administration. A needle of gauge No. 23 or smaller is of help in giving the injection slowly. A suitable vein is selected, the skin is cleaned, and the vein punctured. About one-tenth of a cc. of the solution is injected, and the patient observed carefully. If no untoward reactions develop (the author has observed none), the rest of the dose is given slowly over a time interval of from five to ten minutes, with careful observation of the patient. It is important that the patient remain prone for at least five or ten minutes, preferably ten, after the needle is removed, in order to avoid dizziness and fainting. After that period he can do anything he normally does, without any impairment of his sensory perceptions, judgment, or motor function. The frequency of the injections depends upon the need. In some patients, good effects of one treatment persist for as long as three or four months. In acute pain or anxiety states, a daily injection may be necessary for four or five days. The author was unable to establish rules, but always gave the drug when it was requested.

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* Lyo B-C® was supplied through courtesy of Sharp & Dohme, Glenolden, Pa.

The injection was made up of 20 cc. of 0.25 per cent tetracaine solution and 30 cc. of 50 per cent dextrose solution to which one bottle of Lyo B-C was added. A 50 cc. syringe was used.

* Since the presentation of this paper, the author has been in communication with other physicians who have given tetracaine intravenously. The total number of injections given by them and the author exceeds 10,000, and no toxic effects of consequence have been noted.

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Recommends Law to Test Chemicals Added to Foods

The third report of the House Select Committee Investigating the Use of Chemicals in Foods praises the food industry for much of the progress in the field of nutrition but recommends that the Food, Drug and Cosmetics Act be amended to give Food and Drug Administration more control over foods. The committee recommends that proof of the safety of chemical additives be submitted to the FDA before chemically-treated foods are offered for sale. It points to the increasing use of chemicals in food production, processing, storage, packaging and distribution and to testimony delivered before the committee that some of these chemicals have not been tested properly and might be dangerous.

—Reprinted from *Capitol Clinic*

Parturient Perineorrhaphy

WOODBURN K. LAMB, M.D., ***Berkeley***

• *In the light of improved means of combating infection, better and safer anesthesia, the ready availability of blood transfusion, and less traumatic delivery, reasons formerly advanced in opposition to operations at the time of parturition for repair of preexisting lesions of the pelvic floor are now less formidable than they were in the past.*

Such operations now can be carried out quickly and safely with considerable benefit in terms of immediate comfort and well-being of the patient, prevention of later development of more serious lesions, and savings in cost of hospitalization.

In a series of more than 300 patients so operated upon—the technique used is described herein—none died, and in a review of the records many advantages of operation immediately after delivery, as compared with long delay of needed repair, were noted.

For many years it has been rather well accepted medical practice to advise women of childbearing age who are in need of repair of the pelvic floor to wait until they are beyond the reproductive years; and many gynecologists have been particularly averse to carrying out operations for correction of chronic lesions, caused by previous parturition, at the time of a subsequent delivery.

The principal reason advanced for long delay of such operations is the likelihood that if they are done in the childbearing years, succeeding parturition would but undo the repair. As to operations done immediately after childbirth for repair of chronic lesions, they have been considered hazardous because of increased risk of infection and the fact that sometimes the patient may have serious loss of blood. In recent years, however, what with antibiotics to combat infection, with transfusion a common procedure, with better and safer anesthesia, and with improved technique of delivery to lessen stresses and trauma that might disrupt the repair, these reasons have become less cogent.

Excellent repairs of lesions of the pelvic floor—notably relaxation and rectoceles—can be made immediately following delivery; and, now that injunctions against them are less firm than once they were, good medical and pecuniary reasons for carrying out the operation at that time come to the fore: The immediate well-being of the patient, prophylaxis against herniation of the rectum and the development of cystocele, and the saving in hospital cost effected by carrying out delivery and reparative operation concurrently.

In the past ten years the author performed perineorraphy at delivery in slightly more than 300 patients, none of whom died, and from a postoperative review the following lists of advantages and disadvantages were drawn:

Advantages:

1. Considering the usual complaints associated with relaxation of the pelvic floor, the well-being of the patient is served.

2. The correction of relaxation early is preventive of the development of more serious disease.

3. There is much less postoperative pain with parturient perineorrhaphy than there is when the operation is done at any other time.

4. There is less formation of actual scar tissue.

5. Healing in the postparturient period is much faster and more satisfactory than at any other time. (The average duration of postoperative hospital convalescence was four days.)

6. There is pronounced saving to the patient in time and money by virtue of avoidance of future hospitalization and prolonged convalescence.

7. Coitus is usually more satisfactory.

Disadvantages:

1. There may be an increased loss of blood.

2. Depending on technique, the potential of increased infection is present.

3. There is greater demand on the obstetrician's time.

The technique used by the author is simply a modification of the usual perineorrhaphy, except that sharp dissection is used throughout, rather than combined blunt and sharp dissection, because the tissues at the time of parturition are too friable to stand the usual traction and the lines of cleavage are too difficult to ascertain.

Even though spontaneous delivery might be easy,

Chairman's Address: Presented before the Section on Obstetrics and Gynecology at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

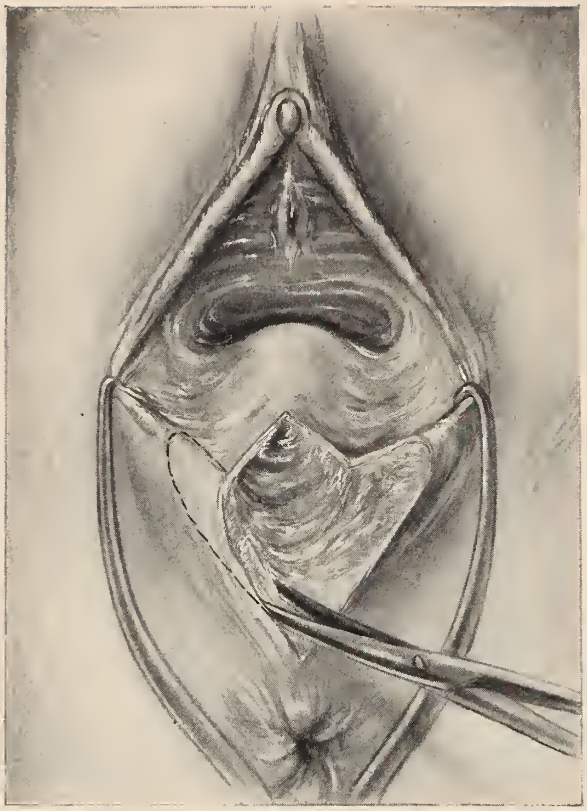

Figure 1

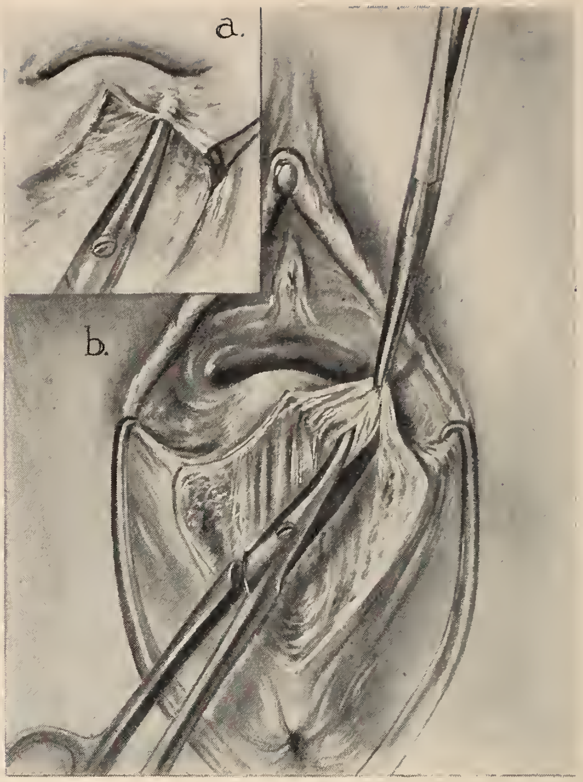

Figure 2

it is advisable to do midline episiotomy as the infant emerges. Following delivery of the baby, the placenta should be delivered by the most rapid method with which the accoucheur is familiar.

A Gelpi retractor then is placed with the points just above the last hymeneal caruncula (Figure 1). Old scar tissue, usually present at the mucocutaneous junction, is excised with curved scissors to the midline incision.

This done. dissection of the posterior wall of the vagina, with sharp instruments only, is begun. Curved scissors are used, with the points kept just underneath the vaginal mucosa (Figure 2a), so that there is no attendant risk to the rectum. The larger blood vessels are also avoided. Dissection is carried upward to the apices of the rectocele and laterally as far as necessary to expose the levator ani muscle. It is advisable to undermine the vaginal mucosa well laterally down to the introitus. The redundant lateral mucosa necessary to a satisfactory plastic closure is then resected, leaving an exposed triangle of muscle and fascia.

By placing the vaginal mucosal sutures and those of the levator ani one at a time and alternately, working room is preserved at both suture lines (Figure 3). The sutures can be continuous or interrupted and suturing is continued to the introitus, including the superficial and deep perineal muscles. Particular care must be taken in placing the deep sutures of the levator ani, for if they are extended too far laterally, a ridge that will result in later dyspareunia will be produced.

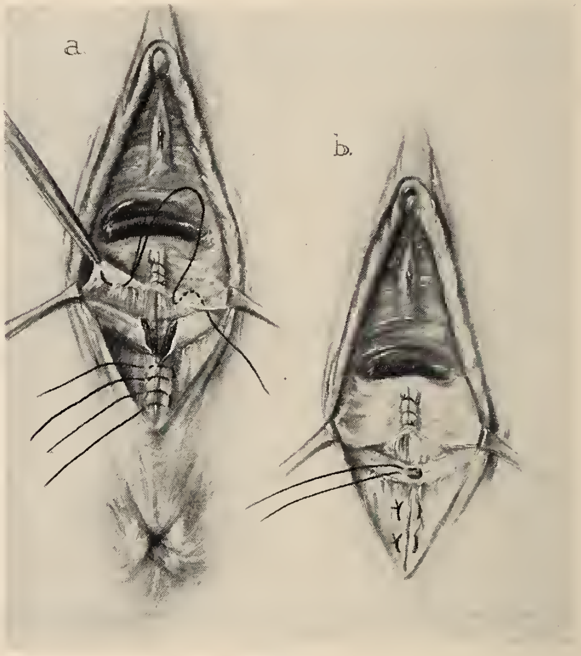

Figure 3

Final closure (Figure 4) is begun with a continuous No. 00 chromic suture. A small curved needle is introduced upward underneath the skin of the labia. This is done on both sides, catching the bulbocavernosus muscles, and the sutures are tied in the midline. One end of the suture is left long, and suturing with the long end is then continued downward in the midline to the lower angle of the incision. From there the suture is returned subcutaneously to the original point and tied subcutaneously, burying the external suture completely. The entire procedure should not take more than 15 minutes for a surgeon familiar with the technique.

It is most important in the immediate postoperative period to be alert for indication that the patient may have lost blood in unsuspected amount. (The amount of blood lost even in simple episiotomy, when carefully measured, is usually a surprise to the surgeon.) The hemoglobin value must be checked the day following operation and, when necessary, blood transfusion administered. In parturient perineorrhaphy the technique must be fairly rapid in order that loss of blood be kept to a minimum.

DISCUSSION

Neither infection nor postoperative pain was a problem in the present series. There was no more discomfort than that associated with midline episiotomy.

Hematomas occurred no more often than they do in connection with episiotomy. In the present series they were less common than they are in mesiolateral episiotomy, probably owing to the better exposure of bleeding vessels.

Particularly to be guarded against in perineorrhaphy is too tight a repair, lest dyspareunia result.

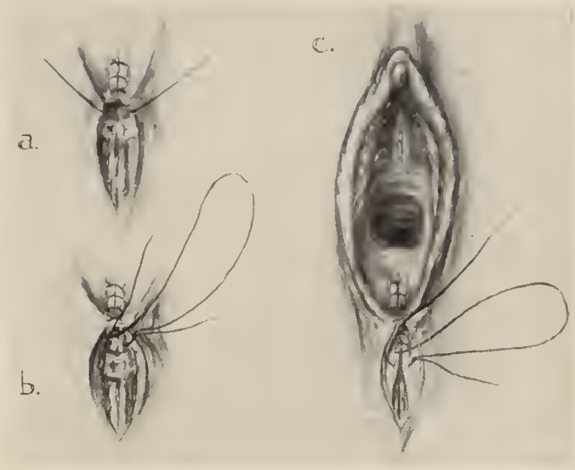

Figure 4

At first the author did parturient perineorrhaphy only in cases in which there was well developed rectocele without cystocele, but now is of the opinion that repair sufficient to provide a good supporting perineum should be done in all cases in which there is relaxation of the pelvic floor. Even where the relaxation is so extreme as to necessitate further operation later for correction of descensus uteri or cystocele, perineorrhaphy gives a great deal of immediate relief and prevents further accentuation of the more severe condition until such time as the more extensive procedures can be satisfactorily carried out. At the time of the later operation, the fact that perineorrhaphy has already been done adds no complication except that of a midline incision for exposure. Perineorrhaphy need not be repeated at the time of the second operation.

It is not a particular technique for operation that is advocated (for the technique is relatively unimportant), but the principle of repair at the time of parturition. The operation can be done quickly, easily and safely by competent surgeons.

2434 Durant Avenue.

Bone Marrow Aspiration

The Posterior Iliac Crest, an Additional Safe Site

HOWARD R. BIERMAN, M.D., *San Francisco*

• *The posterior iliac crest is a readily accessible site for bone marrow aspiration which is safe, psychologically less traumatic, and affords representative samples of bone marrow similar to those obtained from the sternum, the vertebral spine and the anterior iliac crest.*

MANY SITES at which bone marrow is accessible for needle aspiration have been reported, each with particular attributes.[1, 2, 3] With regard to the content of the hematological elements, the marrow in each of the commonly employed sites is similar to that obtainable at the others. Frequently, widespread hemorrhage in the marrow occurs about the site of puncture after aspiration, particularly in patients with hemorrhagic diathesis, causing a distortion of pattern that may make specimens aspirated subsequently from the same area unsatisfactory. It is, therefore, desirable that different sites be selected if repeated aspiration is contemplated. The sternum, anterior iliac crest, spinous process of the vertebrae and the tibia in children are the most common sites.

In the study of leukemia in children, the number of marrow sites available for aspiration is limited and additional sites are desirable.

The posterior iliac crest is the thickened portion of the posterior segment of the iliac crest. It is convex and is composed primarily of cancellous tissue. The surface of the iliac crest in this region is particularly broad and serves for attachments of various ligaments for muscles and articulation with the sacrum (Figure 1). The bone approaches the surface in most children and adults, and the mass of bone marrow in this region is large and safely distant from important structures.

PROCEDURE

The patient is placed prone on a hard flat surface and the regions of both posterior iliac crests are aseptically prepared. The most accessible site from the posterior inferior or superior iliac spine anteriorly is selected and the skin, periosteum and intervening tissue are anesthetized by procaine infiltration. The aspiration needle is pointed anterolaterally in the direction of the iliac crest. The remainder of the aspiration procedure is as at other sites.

More than fifty aspirations from the posterior iliac crest have been successfully accomplished in adults and children without difficulty or complication. In four patients the marrow aspirated from the posterior iliac crest contained a few more immature cellular elements than did samples obtained simultaneously from other sites (Table 1).

Many patients become unnecessarily apprehensive when they see the preparations and instruments for marrow aspiration as well as the obvious effort of the physician, particularly when introduction of the needle through the cortex of the bone is difficult. The prone position obviates this objection and furthermore permits easier restraint upon children during the procedure merely by firm downward pressure

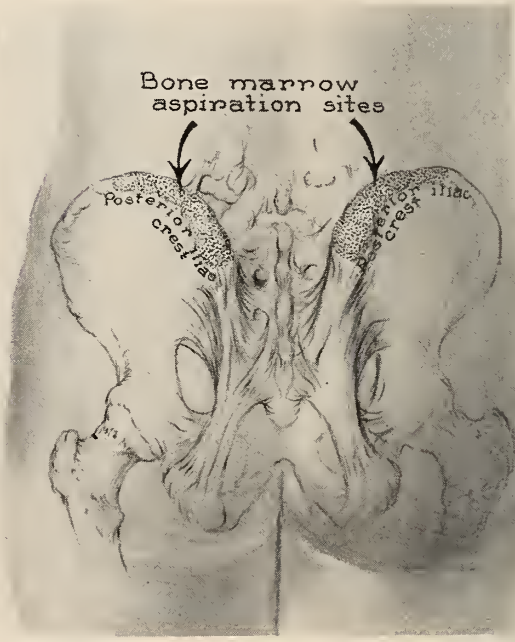

Figure 1.—Areas along the posterior iliac crest available for marrow aspiration.

From the Laboratory of Experimental Oncology, National Cancer Institute, National Institutes of Health, Public Health Service, Federal Security Agency and the Division of Medicine, University of California School of Medicine, San Francisco.

TABLE 1.—Comparison of Percentage of Cell Content of Bone Marrow Aspirated Simultaneously from Two Sites

Sex and Age:	F—2½ yrs.		M—54 yrs.		M—4 yrs.		M—2 yrs.	
Diagnosis:	Lymphatic Leukemia		Carcinoma of Alveolar Ridge		Lymphatic Leukemia		Bilateral Retinoblastoma	
Site:	Posterior Iliac	Anterior Iliac	Posterior Iliac	Anterior Iliac	Posterior Iliac	Anterior Iliac	Posterior Iliac	Tibia
Neutrophils	32.5	29.5	45	41	0.5	5.5	26	41
Bands	7.5	14.5	8.5	9.5	....	....	7.5	5.5
Metamyelocytes	4.5	33	9.5	6.5	....	....	7	6
Myelocytes "C"	18.5	11	9	13.5	....	0.5	22.5	13.5
"B"	7	1.5	4	4	....	....	7.5	9
"A"	1	1	....	1.5	....	....	0.5	1
Myeloblast	0.5	1	0.5	....	....	....	5.5	2
Basophils	....	....	1	0.5	....	....	....	....
Eosinophils	....	0.5	3.5	3.5	....	....	7	8
Lymphocytes:								
small	20.5	4	13	15	35	86	16	8.5
intermediate	5.5	3	2	4	56.5	5.5	....	0.5
large	1.5	0.5	....	....	7.5	....	....	....
Lymphoblast	....	....	....	....	0.5	1	....	....
Monocytes	0.5	....	1	....	....	1.5	0.5	....
Tissue	....	0.5	1	1	....	....	....	....
Plasma cell	....	....	0.5	....	....	....	....	....
			Nucleated erythrocytes per 200 leukocytes					
Normoblasts	126	65	14	26	1	4	83	36
Erythroblasts:								
late	28	26	4	9	3	2	13	5
early	5	8	1	1	1	2	5	....
Megaloblasts	....	1	....	....	....	....	....	....
Megakaryocytes	....	....	....	....	....	....	....	5

upon the lower back by hand, elbow or binder. As the posterior iliac region is nearer than are other aspiration sites to the direct vascular flow from the deeper pelvic structures such as the prostate gland, specimens drawn from it may be more likely to contain material metastatic from those structures.

Laboratory of Experimental Oncology, Laguna Honda Home.

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Analytic Group Psychotherapy

For Wives and Husbands

I. W. RUSKIN, M.D., *Los Angeles*

• *The practice of group psychotherapy has its roots in Freudian dynamics and concepts, and varies from play group psychotherapy to analytic group psychotherapy, using the dynamics of transference, catharsis, interpretation, insight, ego building, reality, and sublimation.*

This presentation is based on the experience of the author with about 40 women patients formed in groups at a sanatorium. The majority were neurotic, psychoneurotic or manic-depressive. Several were psychotic. Some of the patients were treated in groups that included their husbands, after discharge from the sanatorium.

Analytic group psychotherapy is a concept of an attenuated mobile and uncensored societal setting, where persons who have failed in the larger and harsher social reality may again attempt resocialization in a permissive, friendly, and protected environment. It is not to be considered the poor man's makeshift for individual psychoanalysis. Group dynamics facilitate the regression and catharsis necessary to produce insight and ego strength, leading to more rapid recovery.

Husband and wife participation in the same group led to a more tolerant acceptance by the husband of the concept of mental ailment, and empathy for the spouse.

The role of the psychiatrist in group psychotherapy is very similar to that in individual psychoanalysis. He represents the reality to the patient and the group. He is objective but permissive, and not passive. Therapeutic goals are the same as in individual therapy, and may focus on the resolution of pre-oedipal conflicts or on situational maladjustments.

GROUP PSYCHOTHERAPY was first advocated in America. Although two students and associates of the French psychiatrist, Dejerene, in a book published in 1904 remarked upon the relative improvement of psychoneurotic patients treated in groups in a large ward as compared with the more opulent patients treated in private rooms, they did not call attention to the significant point, that the patients in wards exercised a reciprocal influence on each other. In 1905, Dr. Joseph H. Pratt, an internist and now professor emeritus of medicine, Tufts College Medical School, initiated a system of friendly counselling and inspirational lectures to groups of patients with pulmonary tuberculosis. He called these sessions "thought control" and, later, "classes in applied psychology." From 1906 to 1934, he published eight articles on group psychotherapy.

Many others followed or began that kind of therapy independently. Some of these are J. L. Moreno, whose particular contribution was psychodrama, at first with children in Vienna, later at St. Elizabeth's Hospital, Washington, D. C., and Dr. Edward Lazell who in 1920 started group psychotherapy at the same hospital by means of lectures to patients. Under the influence of Dr. W. A. White, a large scale project was started at St. Elizabeth's with remarkable results. L. C. Marsh at Kings Park State Hospital, New York, in reporting the good results of group psychotherapy, stated that "institutions for mental patients should be considered schools rather than hospitals—and the mental patient should be regarded not as a patient but as a student who has received a 'condition' in the great subject of civilization, as most of us understand it, and psychiatry should thus approach him with an intent to reeducate rather than with an intent to treat."

Drs. Louis Wender and Paul Schilder, searching independently for some means to reach the greatest numbers of patients in state mental hospitals, published their findings in 1936. A. A. Low and J. W. Klapman in Chicago and Fritz Redl in Detroit pioneered in group psychotherapy. The Slavson Group in New York under the sponsorship of the Jewish Board of Guardians has been most active and prolific in research and publication of reports. This group has attempted to classify the technique and dynamics involved in group psychotherapy.

There are several different schools of psychiatry, and each practitioner of each school varies the application of psychotherapy to meet the needs of each patient. Similarly, in group psychotherapy, psychiatrists adapt their particular technique to the group. And no one method should be considered uniquely correct to the exclusion of any other. Slavson and co-workers, after a number of attempts classified group psychotherapy into two major categories: activity group psychotherapy, and analytic group psychotherapy. There are several subdivisions of each (which, however. tend to overlap one another) which are adapted for various age groups and clinical problems. The subnames suggest the techniques: Play Group Psychotherapy. Activity Interview Group Psychotherapy, Interview Group Psychotherapy, and Analytic Group Psychotherapy. Analysis and interpretation, which are rooted in Freudian dynamics and concepts,[5] are the dominant features of the latter.

The present discussion is based on experience with group psychotherapy at Resthaven Sanatorium, Los Angeles, a 52-bed institution for female patients between the ages of 16 and 55 who have relatively mild mental ailments and who have sufficient self control to be maintained in an open sanatorium. The stay of a patient at Resthaven averages 42 days; the range is from a few weeks to, in some cases, many months. The patients are admitted by court commitment, or by referral by community agencies, by physicians, or by staff members. The majority of the patients are "clinic" patients; their hospital stay is paid for from public funds, or by some community agency, or by themselves, but they are assigned to various staff members on a clinic or non-pay basis for psychiatric care.

The author started group psychotherapy at Resthaven about a year ago. Eight women, most of them patients of other staff psychiatrists, made up the initial group. The intention was to keep it at this figure, but since it was an "open end" group (new patients being constantly admitted. other patients being discharged) the number varied from six to double that figure. The length of stay in the group varied also with the stay in the hospital and sometimes the patients were not assigned to the group until after they had been in the hospital for some time and were psychologically available for group psychotherapy. Criteria for eligibility to group psychotherapy were that the patients had to be of normal intelligence, in contact with reality, not in extremes of panic or depression, and desirous of participating in this activity. Each patient was given a pre-group interview. Patients with various kinds of disorders participated — neurosis, psychoneurosis, manic-depressive state, and schizophrenia in partial remission with the patient in good contact.

After several months of biweekly group psychotherapy, as the patients were being discharged from the sanatorium some of them expressed a need and desire to continue with group psychotherapy, and the author, after consulting with the staff, continued with some of them on a weekly out-patient convalescent basis. It was suggested that group psychotherapy for out-patients would be of greater benefit if it could include the husbands. The group was enlarged for co-education of patients with their husbands or. in some cases, the mother, and. in one or two cases, the daughter. As the therapist had to keep the number to manageable proportions in order that there might be reasonable participation by those attending, it was necessary to terminate the participation of those who had attended longest, to make room for patients who had recently been discharged and who had the greater need for group psychotherapy. As some of the patients thus discharged still felt they needed group psychotherapy, the author formed another group, to meet weekly at his office, in which some of the patients participated on a private pay basis. Other patients, not included in group psychotherapy, asked to be admitted but had to be refused for lack of room.

About forty patients have participated in these groups for periods of from two weeks to as much as ten months (to date). One-third of the patients did not continue participation as out-patients. Of the remaining two-thirds, about 25 per cent discontinued attendance for various reasons, an additional 25 per cent had to be "graduated," as previously described, to keep the size of the group within therapeutic limits, and the rest, at the time of this report, were still continuing within one or the other of the two out-patient groups. With few exceptions, the patients are married and have been continuing in group psychotherapy once a week with their husbands, one with her daughter.

A stenographic report has been made of most of the group sessions. During the first three months, a volunteer stenographer transcribed shorthand notes. Later an electronic tape recorder was used and transcripts were made by stenographer-patients in the group, who had much interest in listening to their own discussions. Some of the sessions were not recorded, partly because the subject matter was repetitious and partly because the job of transcribing became too burdensome. It takes about six hours to transcribe a session of an hour and a half. On one occasion, a paranoid patient who was engaged in a difficult divorce suit was apprehensive that the recording of her conversation might be used against her in the litigation. However, after an explanation by the psychiatrist and consultation with her attorney, she continued the group psychotherapy sessions. After the divorce was granted and the patient was discharged from the sanatorium, she continued with the group psychotherapy as an out-patient.

The patients reported at first that their husbands were skeptical and hostile to participation in group psychotherapy. Usually, however, after attending several sessions, the husbands developed a better concept of psychiatry, were enthusiastic in attendance and participation, and became more tolerant and emphatic. Some of them recognized their own need for psychotherapy and one supplemented group psychotherapy with individual analysis.

The author's experience in group psychotherapy began a number of years ago at the Veterans Administration Neuropsychiatric Hospital. The subject was introduced to the group of patients with a series of lectures, as a frame of reference for their orientation in the group and as individuals in the social structure. The dissertation was called "Human Nature and Culture—Two Sides of the Same Coin." The concept is that, assuming reasonably normal births, normal constitutions, and normal intelligence, the individual then is the product of environment. He brings with him all the potentialities for individual development, and his personality is molded by the culture and society about him. A step by step explanation is given of the scientific research supporting this theory. (Pavlov's experiments in conditioned reflex, for instance—producing positive reaction to the sound of a bell; and the perverse negative reaction: a dog is subjected to a terrifying experience on being given meat, until he learns to cringe from the good things in a dog's life.) Additional discussion indicates how purely autonomic and automatic activities are learned, controlled, or changed. This is for the purpose of explaining the extent of activities which are unconscious, automatic, and are subject to conditioning. An exploration of Freudian research and theory clarifies the development of libidinal cathexis, psychosexual cycle, attitude formation, defense mechanisms, and dynamics, and so to the theory of the conscious and unconscious mind. Finally, it is established that the individual is sufficiently plastic that he can relearn appropriate feelings and attitudes and unlearn exaggerated defense mechanisms, as long as he is not organically deteriorated and has a normal intelligence quotient.

While all the dynamics and techniques used in individual analysis are used in group psychoanalysis, the following are noted and will be specifically discussed: Transference, catharsis, interpretation, insight and/or ego building, and finally social interaction, through reality testing and sublimation.

TRANSFERENCE

The ego-involvement of the individual with his parents, siblings, teachers, authority and other members of society is the dominant determinant expressed by his feelings and attitudes in his object relationships and to himself. This ego-involvement is similarly projected toward the therapist as the *father-figure* and to the individuals of the group as the siblings of his family and as society. The patient enters the group emotionally traumatized, with acquired fears, anxieties, and self-rejection. Under the censorship of the super-ego, he has had to repress his feelings and feels guilt-ridden. This has led to reaction formation, exaggerated mechanisms of behavior in an attempt to adapt himself to what he feels to be a threatening and hostile environment. The result is maladjustment, neurosis, and mental illness. Finding in the therapist and members of the group a miniature social setting, the patient displaces upon them these repressed unconscious guilt and anxiety-evoking feelings and attitudes. But this is an attenuated milieu, less threatening and more accepting to the battered ego. This transference in the group is the major dynamic, is therefore diluted both quantitatively and qualitatively and is therefore less threatening to the patient. It is like a desensitizing dose of allergen to one who has allergic disease. The ego-involvement between the patient and the group (including the therapist) is in a metered dosage which he can tolerate. This, however, is also a disadvantage since it reduces the depth of analysis. Associated with the interaction in the group, there is identification and mirror imaging with other patients. This extends reality object relationship which is so defective in these patients. Alternating positive and negative transference is not uncommon, but the constancy shown by the patients in attending the sessions and some very real social attachments between husband-wife teams to others in the group attest their psychotherapeutic value.

CATHARSIS

Freud based his entire analytic therapy after transference upon free association and catharsis, which reduce tensions, conflicts, and symptoms. Resistance to uncovering repressed feelings is due to fear of violating the ego-ideal and therefore regression to immature urges, interests, and attitudes, which are associated with feelings of repressed frustration, hostility, and sexuality which arouse shame and anxiety. It is necessary that the patient be placed in an emotional setting where he will feel free from fear and misgivings, through acceptance and understanding, and allow himself to regress to stages where his emotional development has been arrested (fixation). These are the repressed emotional tensions. The ego-ideal encouraged by the accepting therapist and supported by the other members in a group where societal censorship is suspended, is able to achieve catharsis of repressed emotions. The anxiety felt by patients in relation to "obscene" words, sex feelings, and hostility to parents, husbands, children, and siblings, is considerably reduced when these subjects are discussed in a matter-of-fact, uncensored atmosphere. Each becomes aware that what she felt to be her secret sin and vice is a universal and not unnatural state.

The resistance of patients to accepting the fact of their mental illness is readily overcome when they learn that the others in the group who look and behave not unlike people in general society, are in the sanatorium because of emotional or mental illness, similar to their own, and that the stigma ascribed to this condition by people in general has no validity. The need to keep up the pretense that it is a mortal sin not to love husband, mother, or child disappears with an understanding of how ambivalence and even strong hostility towards these relatives have their genesis in the feelings of insecurity and inferiority which are part of everyone's personality. The analysis of these dynamics greatly reduces the feelings of guilt and anxiety and the patients mutually encourage each other to regression and catharsis.

Some patients do offer more narcissistic defenses in the form of resistance to regression. It may sometimes be necessary to go beyond analyzing defenses and to attack them directly, but this is a risky procedure and should be undertaken with considerable skill and care.

Identification transference and mutual support often serve to catalyze one another as in evangelical revivals. This is a process of universalization and gives a feeling of acceptance.

Group psychotherapy sessions are not always friendly and placid, nor are they intended to be. On several occasions the author has invited the members of the group to analyze and express their feelings toward the therapist and each other, with some amazing results. The meetings usually end on a most friendly note, which is a measure of transference and libido gratification and attests to the value of the group meeting. The subjects usually creating the greatest tensions are feelings of hostility and destructiveness toward children, parents, and husbands in that order, guilt feelings about sex, sex practices, homosexuality, feelings of inferiority and the concept of mental illness.

INTERPRETATION

Interpretation differs from explanation in that the latter is an intellectualization of the manifest content whereas interpretation deals with the latent feeling and motive. Resistance to repressed emotions is often cloaked in rationalization. It is obvious that the patient is using this as a defense against anxiety, and if the condition is severe, it is sometimes not wise to make a direct interpretation which may increase the anxiety. In such circumstances, a similar but disguised and hypothetical situation is introduced for group discussion and group interpretation, with a request to the anxiety-ridden member for her interpretation. The immediate personal situation is then resurrected and the particular member is usually then able to interpret her feelings and dynamics, with resultant relief of anxiety. While this gives understanding and insight, it does not always permit this new insight and reason to carry over to control emotion and behavior in a future situation. But it does improve ego strength and lessen the intensity and frequency of emotional conflicts.

Not all members of a group are equally ready to accept an interpretation at the same time, and it then becomes necessary to concentrate attention on a particular patient. Others show their empathy for this patient by giving comparable illustrations of their own life situations, which tend to reduce the anxiety of the individual, making interpretation more acceptable. This is treatment of a patient in a group through group treatment. It is not attempted to interpret every latent and unconscious motivation manifested by patients to the therapist, as patients may become overly conscious and analytical of everything that is said. Where it is felt that interpretation might stop regression and catharsis, interpretation is withheld.

INSIGHT AND EGO BUILDING

In group psychotherapy, the individual can see his dynamics and defense mechanisms mirrored in others and learn to relate the interpretation to himself and others. For example, a 25-year-old patient with a very traumatic broken home background, where there was a more favored younger sister. She has been married five years. Five months ago, she gave birth to a daughter and depression developed. She is extremely narcissistic, dramatic, and has elements of schizoid behavior. At her first appearance in the group, she declared how extremely happy she and her husband were and how much she loved her husband, mother, and daughter who has had to be boarded out since birth and whom she sees every two weeks. Several days ago, her husband had to be admitted to the Veterans Administration Psychiatric Hospital. Her mother wanted to stay with the patient during this period. They both come to group psychotherapy. The patient explained the crisis in her family and stated she did not want her mother to live with her because they get on each other's nerves. She actually had a feeling of relief when her husband went to the hospital because she and her husband had been rivals; and she refused to be intimidated by her mother, who needed to stay with her as a socially acceptable gesture for her relatives and friends. She stated she was stepping out of her "Helen Hayes role," as her previous play acting had been called. Everyone in the group except the mother agreed with her decision and several offered their help. Through group transference and catharsis, she was able to reduce her narcissism and her feeling of guilt on the score of her repressed hostility toward her family and was able to express her hostility. She clearly identified her feelings and motives, no longer accused herself of being grossly unworthy of her husband and mother, and noted some of her husband's and her mother's neurotic manifestations. Several days later, although faced with some real problems because of her husband's hospitalization, she took inventory of their finances, set up a budget, and stated she wanted to bring her child home if the therapist approved.

The need for social acceptance which gratifies the ego-ideal is a dominant survival value in neurotic and psychoneurotic persons. This leads to rationalization on the basis of the tensions produced by the immediate situation and is a resolution of a problem without reality, purpose, or goal. This concatenation often compounds the difficulties of the patients. Each can see the real needs of the other in the group and each can take a long term perspective of following through to a goal for the other. To illustrate:

One of the patients in a group, a former school teacher, mother of two children, is married to a husband whose sister is married to the patient's brother. The sister-in-law is beautiful, capable, and well-to-do. The patient had a pathologic libidinal attachment to the brother and is extremely jealous and hostile to her sister-in-law, although professing great friendship. She has had several mental breakdowns necessitating sanatorium care and electroshock treatment. Recently, she started back to school to take courses in psychology and sociology. Initially she had great enthusiasm for the courses, but halfway through the semester she became discouraged, fearing failure and ego trauma. She was graded "C" in the courses. While she denies that she needs or wants anything to make her happy, she continually expresses dissatisfaction with her husband, children, and home. The group has readily interpreted her driving ambition to be first in her class, to be the center of attention in the group, to get ahead of the Joneses in her group.

However, the acceptance by the group that such needs, drives, and ambitions are universal and that the desire to be a leader is not immoral, has helped her to continue with her program, which in itself may be the stepping stone to something worth while. This is ego building.

INTRAGROUP DYNAMICS

Some persons endorse group psychotherapy because of its economic virtues. However, the impression should not be left that group psychotherapy is a makeshift made necessary by difficult and exceptional circumstances. There is a contagion in a group which reduces the individual sense of responsibility and conscience, and which gives the individual in the uncensored group a sense of collective strength. As Freud pointed out, the primitive impulses flow more easily in group than they do in individual relationships—as in the primal horde against the totem authority. Where individuals find it difficult to adjust to a group because of its social fixity, they had no difficulty in adjusting to group psychotherapy, because of its social mobility. Because of a permissive atmosphere, individuals essay expression at regressed levels, and when not censored get support for a new ego-ideal. This is reality testing and they find acceptance for themselves as mirrored in the group and the therapist. This is an attenuated social group but some are re-trying wings that have functioned poorly before and now the exhilarating experience encourages them to use them again in the more formal society outside. Social codes are reevaluated and precept and practice are brought more nearly into focus. Horatio Alger and Elsie Dinsmore receive the debunking they so richly deserve, and the facts of life rather than the fantasy begin to have a more robust and not less glamorous structure. An inventory of the patients' very real assets and opportunities in reverse identification gives them a perspective toward purposeful living and new goal-directed energy. Seeing others with a drive to get well produces an incentive, by example, toward the same end.

HUSBANDS AND WIVES

Group psychotherapy for husbands and wives is not to be construed as pink cellophane ersatz for the original heaven where marriages are made. All the patients are dissatisfied with their spouses, children, parents, life, and themselves. They bring their complaints into the group session. The husband is inconsiderate, lazy, and sloppy. He drops his dirty underwear, shirts, and socks all over the home and never washes out the bath tub on the infrequent occasions when he bathes. He is unfaithful, unattractive, uncouth and never has an affectionate gesture for the wife. He is not financially successful and has none of the esthetic graces that are considered cultural attainments. He has no understanding and love for the wife or her needs. He gets into bed with her only to satisfy his sexual desire and leaves her unsatisfied: or else she merely submits to get it over with.

The wife is a poor housekeeper, parasite, inconsiderate of the needs of the husband who is out battling a hard world for a living. She is sloppy, unattractive and has lost her sexual glamour. She is also unfaithful or she would be if she had the opportunity. She is mean and petty.

Some husbands were forced into marriage to legitimize unborn children. The respective spouses had some pre-marriage glamour—now they have changed.

Or have they changed? Granted the non-static personality and the gradual changes brought about by organic maturation and senescence, they discover that the real change is in the apperception of the complaining spouse who has shed the rose colored glasses with which he or she first appraised his or her spouse, and that in the emotional view box, there has now been substituted a stigmatic mirror which gives a distorted image of the spouse. He or she sees not what is, but what he or she feels as reflected in one's own feeling of inferiority and dissatisfaction with one's self.

And so the classes discuss: Why do people get married? What is love? What is the reality of the marriage union? On paper, the patients' stories, experiences, attitudes, and feelings sound sordid, not at all like those of a fairy tale princess, for the patients are real and are not different qualitatively, but only quantitatively, from the so-called normal in their feelings. attitudes, and behavior.

Recrimination openly expressed in the group, giving vent to repressed feelings, find universality, and therefore become less threatening and less guilt-ridden. The luck which the patients had fancied as sheltering the domestic lives of other persons at last begins to look more nearly like their own, and so comes better self-acceptance and understanding and acceptance of the spouse. Understanding the dynamics underlying the recriminatory behavior takes away much of the sting, and husbands and wives develop empathy for each other. They need no longer so strongly "repress the desire to sin and the guilt thereof."

THE ROLE OF THE THERAPIST

The role of the therapist in group psychoanalysis is the same as in individual psychoanalysis. It is based on transference, catharsis, interpretation, the development of insight and ego building, and reorientation to the social group. The therapist should have complete anamnesis for each patient, and must understand the psychodynamics of each patient, particularly the nuclear problem. He must have a plan of treatment in relation to a particular patient, as to depth of analysis and treatment goals. The therapist must recognize that although patients may have a variety of conflicts, all have the same basic tensions. primarily associated with parents and secondarily with siblings, real or social. He must be prepared to deal with libidinal sexual strivings whether for the same sex or opposite, and positive or hostile. When catharsis is displaced upon the therapist, libido is detached from earlier ego involvements, and ego defenses are diminished. As emotional conflicts are reduced, these patients find that in turn their attitudes toward parents and others become less tense. Slavson called this "transference in reverse." The therapeutic process occurs when, after expressions of hostility, release of tension and insight take place. resulting in "psychic homeostatis," integration and emotional maturity.

While the therapist should not be authoritarian, he must not be passive. His role is to orient, stimulate, and particularly to understand. Nothing so frustrates a patient as the feeling that the psychiatrist does not understand. In this permissive climate the patient can discuss every subject from hair-dos to religion, but the therapist is required to focus the discussion within reasonable bounds for relevancy, and occasionally may have to divert it when a subject becomes too anxiety-provoking. Sometimes patients need supplementary individual interviews to discuss some problem which is too anxiety-ridden for them to discuss in the group.

Therapeutic goals differ from patient to patient. As in individual analysis, there is today some professional controversy as to whether it is always best to proceed to deep analysis of the pre-oedipal basis for neurosis, or to give symptomatic relief by helping to resolve the present emotional conflicts by dimininishing the ego-ideal and developing a more tolerant attitude by the patient toward himself. Termination of treatment calls for both great skill and professional acumen. It should be planned with a final individual interview as a graduation exercise, rather than have it terminate in a desultory manner which might seem to the patient to be the earmarks of failure in another course.

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Colonic Procidentia

IRVING L. LICHTENSTEIN, M.D., ***Beverly Hills,*** **and**
ALEXANDER W. ULIN, M.D., ***Philadelphia***

• *Distinguishing clinically between procidentia of the colon and prolapse of only the mucosa may be difficult in some cases. Observation of certain differential features will aid in diagnosis. Although in some circumstances it may seem advisable in surgical repair of procidentia to use a procedure that does not necessitate laparotomy, such operations are dangerous in that they do not permit direct inspection of the contents, perhaps vital, of the herniated sac to be excised or occluded.*

Procidentia of the colon through the anus, while not a frequent phenomenon, may occasionally tax the ingenuity of the most experienced surgeon.

The term *prolapse* is sometimes used to designate either of two pathologic conditions of the colon—one in which there is herniation of mucous membrane alone, and the other in which the complete wall of the colon descends. In the interest of distinction, however, the term *procidentia* would seem a better one for the latter condition. Figure 1 illustrates the pertinent differences. The dotted line represents the mucosa, which is involved in both conditions. Procidentia includes the submucosa, muscularis and serosa as designated by the solid lines in the illustration.

With eversion of the intestine, the effect is intussusception. The serosa of the intussusceptum slides easily over the serous surface of the intussuscipiens, with which it is in contact.

Ordinarily, the often-emphasized perianal sulcus (Figure 1, lower right) distinguishes procidentia from mucosal prolapse. If only the lowermost segment of the rectum is herniated, however, or if the herniation is about an artificial anus made in colostomy, there may be no sulcus, and diagnosis then depends upon observation of other distinguishing features:

1. In procidentia, the protruding segment, made up as it is of a fold of the entire wall of the colon, is thicker and firmer than is herniated mucous membrane alone.
2. Usually in procidentia the extent of protrusion is greater than in prolapse; most often the length of the exposed fold is greater than the diameter of the base.
3. In procidentia the rugae on the protrusion are oval, whereas in prolapse they are longitudinal or radial.
4. As the anterior wall of the colon slides down farther than the posterior wall, the herniated segment of the colon in procidentia tends to curl slightly to the rear (Figure 2).
5. Owing to the inclusion of small bowel in the hernia, peristaltic sounds or tympanic resonance on percussion may be noted in the herniated sac.

As both the Mikulicz operation and the Mont Reid procedure have been recommended for repair of sigmoid procidentia, the following two cases in which the patients died are reported to call attention to the possible dangers in these operations.

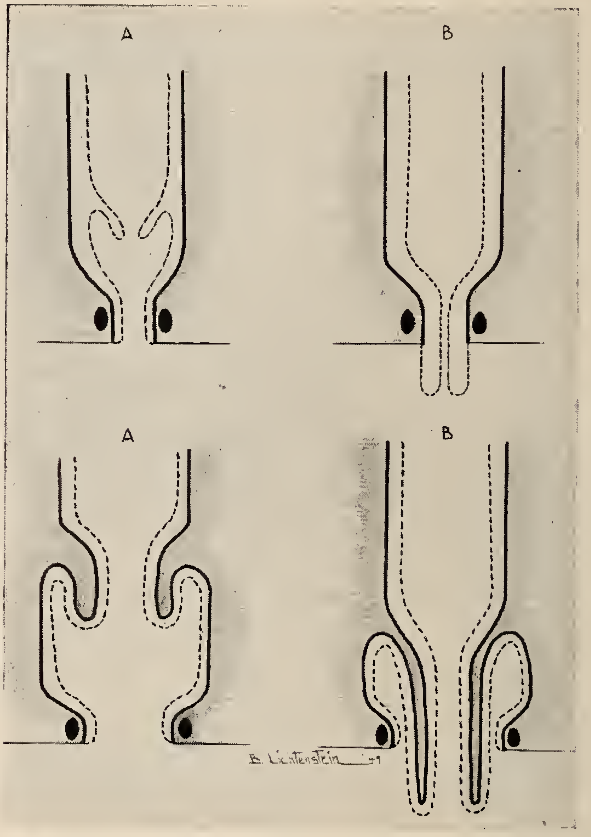

Figure 1.—*Above, A,* incipient prolapse of the mucosa; *B,* prolapse with herniation. *Below,* corresponding stages of procidentia.

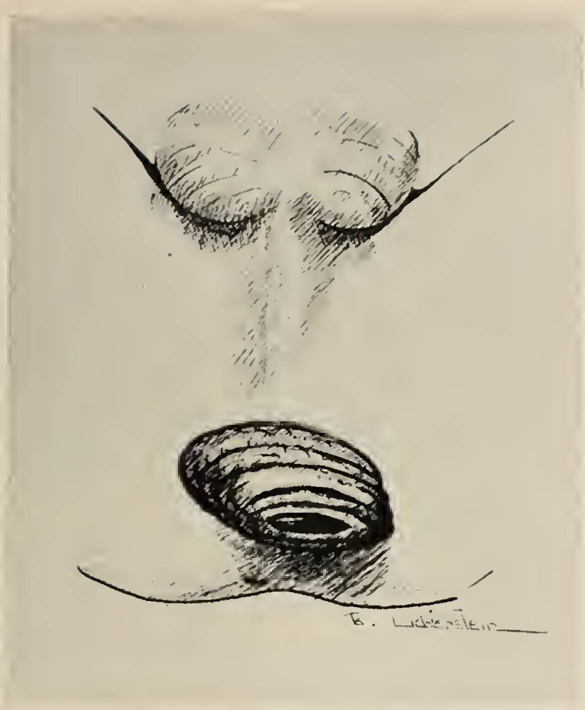

Figure 2.—Posterior curving of herniated segment in procidentia.

CASE REPORTS

Case 1: A man 67 years of age was admitted to hospital with procidentia at the artificial anus formed in a palliative loop colostomy that had been done earlier because of rectal cancer with hepatic metastases. Prostatic hypertrophy subsequently caused retention of urine, and straining at micturition caused protrusion of the bowel at the abdominal opening.

Upon physical examination, protrusion of 18 cm. of the distal limb of the bowel was noted. The proximal stoma was normal in all respects. The intussusception was reduced but it promptly recurred. The circumstances appeared ideal for the Mikulicz operation. The redundant portion of the bowel was transected approximately 4 cm. distal to the skin. In effect, primary anastomosis was performed, and the suture line was replaced in the abdomen. Subsequently bleeding from the distal limb of the bowel was noted. The patient died a fortnight later with clinical icterus and fulminating peritonitis. Upon autopsy, multiple perforations of a gangrenous segment of distal sigmoid colon, abscess formation, and pyelophlebitis were noted. In the operative procedure a major branch of the left colic artery and the marginal artery to the sigmoid colon had been inadvertently sectioned. (See Figure 3.)

Case 2: An 80-year-old man was admitted to hospital because of severe rectal hemorrhage of 24 hours' duration. Severe catharsis at home after several days of obstipation resulted in hemorrhage and rectal protrusion.

Upon examination it was noted that there was complete rectal prolapse with strangulation of the intussuscepted seg-

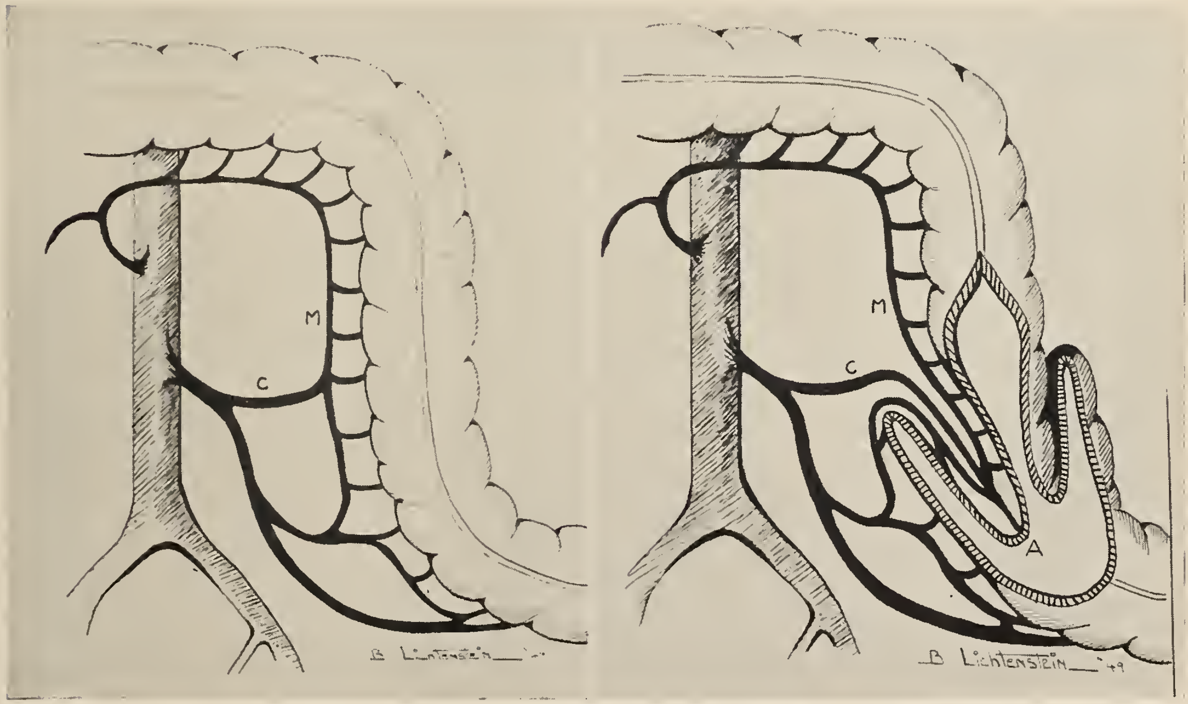

Figure 3.—That the Mikulicz operation entails the hazard of inadvertent sacrifice of the supply of blood to uninvolved colon is illustrated. *Left*—A diagrammatic illustration of uncomplicated sigmoid colostomy. *Right*—A diagram of an early stage of procidentia, the beginning of the intussusceptive process. The marginal artery, *M*, and even the left colic vessel, *C*, may become the contents of the hernial sac, particularly as procidentia progresses. With progression of the intussusception, the apex, *A*, protrudes beyond the abdominal wall. Mass ligatures or blind excision proximal to this point may then interfere with vital supply of blood to the intestine beyond the operative site.

ment. At the apex of the segment was an ulcerating, bleeding lesion, apparently carcinoma. It was assumed that the peritoneal cavity continued down into the prolapsed segment. There was no evidence that the small bowel was involved. The patient was in a state of incipient shock.

Subsequently, the patient went into profound shock. No evidence of obstruction of the small bowel was observed in x-ray films. Considering the age and the critical condition of the patient, the perforating malignant lesion and strangulation of the bowel, celiotomy was deemed inadvisable and the Mont Reid procedure was employed. Two strangulating ligatures were applied to the neck of the herniated segment, around a rectal tube. This controlled the hemorrhage from the infarcted segment of bowel. However, peritonitis developed despite good drainage from the rectal tube. The patient died on the fourth postoperative day.

Upon postmortem examination a pinched-off loop of sigmoid colon was noted in the rectovesical pouch. A segment of the wall was gangrenous, but the lumen was not completely obstructed. Fulminant peritonitis was present.

DISCUSSION

Operations of five main types have been suggested for repair of procidentia of the colon and rectum: Restoration of the pelvic floor, as in the Mayo operation; the Martin procedure for suspension of the bowel; obliteration of the pelvic cul-de-sac, as described by Moschowits; constriction of the anus and rectum; and the Mikulicz operation—transection of the intussuscepted bowel.

The Mikulicz operation may be fraught with danger. It and the Mont Reid procedure have much in common. Anatomically, they produce the same result and both are done without laparotomy. Although in the Mikulicz procedure the peritoneal cavity is opened and the area about the operative site may be examined, nevertheless it is impossible properly to delineate the vascular tree. Peritoneal contamination is more likely than in the Mont Reid method, where an eroding suture causes an inflammatory agglutination of the peritoneal surfaces. In the Mont Reid procedure, it is impossible to determine the nature of the contents of the hernial sac that is ligated. (In Case 2 reported herein an unsuspected internal hernia was involved and the patient died.)

Although with regard to the two cases reported herein it might be argued that the condition of the patients contraindicated celiotomy, with present improvement in surgical and anesthetic techniques and pronounced advances in supportive therapy, "blind" operations done to avoid more extensive procedures can hardly be condoned. There is no substitute for direct inspection.

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Recommends "Go Slow" on Fluoridation

After two years the House Select Committee Investigating the Use of Chemicals in Foods has completed its work and, as a last recommendation, asks that communities *"go slow" about fluoridating water supplies.* While fluoridation has been approved by the A.M.A., American Dental Association, U. S. Public Health Service and several public health associations, the committee contended that there are "too many unanswered questions" and urged further clinical study.

—Reprinted from *Capitol Clinic*

Extragenital Syphilis in Physicians

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• *In reply to a questionnaire, 51 cases of extragenital chancres in physicians were reported by 32 contributors. Thirty-five of these lesions occurred on the fingers, six inside the nose, one on an eyelid and one on an arm.*

Otolaryngologists and medical students, interns and residents were affected most commonly.

Examination of patients, deliveries, pelvic examinations, needle punctures and tonsillectomies seemed to be the most dangerous procedures in this regard.

Since such lesions in physicians frequently are diagnosed as pyogenic or malignant lesions and so treated, the importance of a high index of suspicion for syphilis is stressed.

THEORETICALLY, contracting syphilis by other than venereal means should be rare indeed. However, when a questionnaire seeking material for a report on professional dermatoses[1] was sent to a number of dermatologists, 16 of the 60 who answered reported having observed a total of 27 cases of extragenital primary syphilitic lesions in physicians.

Because of the interest expressed in this particular item of the report when it was published, the subject was pursued further by sending questionnaires to another group of dermatologists. Sixty-five more answers were received.

Of the 125 dermatologists who answered the first or second questionnaires, 32 reported observing a total of 51 cases of extragenital chancres in physicians. In many instances, the information given was so sketchy that it was impossible to establish significant statistical data.

In 35 instances the lesions occurred on the fingers, in six inside the nose, in one on an eyelid, and in one on an arm. It may be surmised that the rather high proportion of lesions in the nose occurred as a result of a patient's coughing sputum containing the organism in the direction of the physician. One of the physicians who answered the questionnaire felt that such localization might result from picking the nose with the finger.

The contagiousness of mucosal lesions was indicated by the fact that otolaryngologists were affected more commonly than any other well defined group; six of the infected physicians were in that specialty. Six cases were observed in interns, residents and medical students, five in general practitioners, and two in pathologists.

Surprisingly, routine clinical examination of patients was the most common means of infection (seven cases). In five cases infection was acquired in delivery or in pelvic examination. Three cases were attributed to needle wounds and three to tonsillectomy. Apparently two resulted from autopsy examination and one from exposure in surgical treatment. Except in the cases of the needle punctures, the statement "not wearing gloves" recurred through the reports.

DISCUSSION

Almost any physician must have recognized at one time or another the wide range of attitude among his colleagues as to the possibility of becoming infected with syphilis in the practice of medicine. Some have wholesome fear or morbid dread that they themselves might innocently contract the disease from a patient; many have an almost scoffing attitude toward supposition that any of their fellows might so become infected. Usually a physician who sticks himself with a needle used on a syphilitic patient will worry considerably about the possibility of infection. It is difficult indeed to soothe and reassure the "exposed practitioner." The most extreme example of syphilophobia known to the author is that of an intern who, upon learning that he was examining a patient with a positive reaction in serologic test, rushed out of the room, scrubbed and showered furiously, and put all his clothing in an autoclave. The result: bizarre raiment, a rather extraordinary plastic fountain pen that had been left in a pocket, and a somewhat rueful—though healthy—intern.

At the other end of the scale was a syphilologist who confirmed a diagnosis of syphilis by darkfield examination of material from a lesion on the penis of a patient. The patient paid the fee in silver coins and left the office. After pointing out to a preceptee that the coins were undoubtedly teeming with Tre-

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From the Department of Dermatology, Mount Zion Hospital, San Francisco.

ponema pallidum, the specialist pocketed the money, advising the gaping student that one ought not let superstition interfere with one's livelihood.

Of a kindred order are physicians who, upon noting an extragenital chancre in themselves, may mistake it for pyoderma, forgetting previous exposure to syphilis, and consult a surgeon. The surgeon's index of suspicion of syphilis may approach zero, and antibiotic and chemotherapeutic agents may be administered without a diagnosis. The lesion then may heal, but since the amount of the drug given in such circumstances is subcurative, later complications remind the physician-patient of the seemingly "pyogenic" lesion.

Another fairly common mistake is the diagnosis of malignant disease and amputation of a digit or a hand. Unfortunately, the diagnosis of malignant change may be "confirmed" by histologic examination of a biopsy specimen. Surprisingly, this sequence was not unusual in the reported cases.

Undoubtedly, the incidence of professionally acquired syphilis in physicians is low, owing to decreased incidence of the disease, use of rubber gloves and aseptic technique. However, the report of 51 cases of extragenital primary syphilitic lesions in physicians indicates that a real danger exists. Although it is well to reassure exposed colleagues, it is an error to overlook the possibility that syphilis can be acquired innocently from patients.

447 Twenty-ninth Street.

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VA Economies in Medical Fields

Veterans Administrator Carl R. Gray, Jr., reporting on his four years as head of the organization, listed economies of $137 millions, with approximately $40 millions saved in medical fields. His summary was presented to the House Veterans Affairs Committee. Savings in the medical department (other than in construction and administration) were said to include:

1. Reduction and control of number of physical reexaminations for adjudicatory action—$25,250,000 saved.

2. Standardization of procedure for collection of fees from insurance companies for hospitalization of veterans with non-service connected conditions—$7,200,000, "which would not otherwise have been paid the government by the insurance companies."

3. Inventory and personnel economies in pharmaceuticals—at least $2 million.

4. VA's operation of its own blood bank program—$3 million saved.

5. VA's operation of its own dental laboratories—$2.3 million saved.

The above economies do not represent reductions in overall spending. VA's total budget for fiscal 1948 was $6,922,457,320, with the medical department getting $588,561,819. For fiscal 1952 the total estimated budget was $4,409,265,220, with $703,190,160 for medical activities.

—Reprinted from *Capitol Clinic*

CASE REPORTS

- ***Methemoglobinemia Simulating Bulbar Poliomyelitis***
- ***Hypertrophic Pulmonary Osteoarthropathy***

Methemoglobinemia Simulating Bulbar Poliomyelitis

ROLLAND A. OLSON, M.D., Eugene, Oregon

A NINE-YEAR-OLD white boy was admitted to the Los Angeles County Hospital January 14, 1951. Several hours earlier he had lost consciousness at school and three physicians who examined him had concurred in a diagnosis of bulbar poliomyelitis.

Two weeks previously the patient had had fever, nausea, vomiting, and diarrhea which lasted four days. Upon physical examination the patient was noted to be acutely ill. The skin was pale and gray. There was pronounced hypoventilation and stupor. The patient vomited yellowish lumpy material which was casually referred to as "eggs" by one observer.

Oxygen under positive pressure was given while tracheotomy was started. The cut tissues and blood were brown, resembling chocolate milk, which suggested the diagnosis of methemoglobinemia. The laboratory reported a methemoglobin concentration of 66 per cent before treatment was instituted. Five milliliters of 1 per cent methylene blue in 45 ml. of normal saline solution was given intravenously. Within an hour the patient was talking, the color of the skin was normal, and the methemoglobin concentration was 22 per cent. The patient then said that he had eaten yellow crayons. (A tooth-marked piece of crayon had been found in a pocket of his garments.) Several hours later the patient was transferred to a private hospital, apparently well except for the tracheotomy incision.

On chemical analysis, the piece of crayon was reported to contain dyes of a group which includes benzidine yellow, vulcan fast yellow, ceylon yellow, and toner yellow. The exact type was not reported because of analytical difficulties on the small quantity of specimen.

Methemoglobin consists partially of iron which has been oxidized from the ferrous to the ferric form that does not transport oxygen. The process is slowly spontaneously reversible and does not damage the red cell. The symptoms result from generalized anoxia.

Treatment consists of the administration of reducing substances. Ascorbic acid acts too slowly and hence is not used in the acute form of the disease. Methylene blue intravenously in doses of 1 to 2 mg. per kg. of body weight given over a five-minute period is safe and effective. Methylene blue acts by speeding the reconversion mechanism of the normal cell.

Primary methemoglobinemia is rare and is due to a congenital biochemical defect in the erythrocytes. Secondary methemoglobinemia is usually due to drugs, of which nitrites, sulfonamides, and aniline derivatives are probably the most important. Phenacetin and acetanilid have frequently caused methemoglobinemia owing to their widespread use. Most cases of poisoning due to the ingestion of wax crayons have resulted from orange or yellow crayons. Flinn and co-workers reported that the feeding of wax crayons to animals did not produce methemoglobinemia. They concluded that since relatively few cases of poisoning in humans are reported, considering the frequency of wax crayon ingestion, the occasional poisoning with the material probably can be classed as an idiosyncrasy.

1085 Washington Street.

REFERENCE

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From the Service of Dr. A. G. Bower, Contagious Disease Unit, Los Angeles County Hospital.

Hypertrophic Pulmonary Osteoarthropathy

EDWARD J. SMITH, M.D., PERRY OLSEN, M.D., and AARON FINK, M.D., *San Francisco*

THE AUTHORS recently observed a case of hypertrophic pulmonary osteoarthropathy in which the patient was first observed because of massive edema of the legs and the edema was dramatically relieved upon correction of the primary visceral disease.

Hypertrophic pulmonary osteoarthropathy, Marie's disease, was first described independently and almost simultaneously by Pierre Marie and von Bamberger in 1890. Since then, numerous reports have confirmed Marie's original description of the condition as symmetrical periostitis of the four extremities, involving mainly the phalanges and terminal epiphyses of the long bones of the forearm and leg. These changes sometimes involve the bones of the entire limb, and may be associated with dorsal kyphosis and some involvement of the joints, resulting in swelling of soft tissue and tenderness over the involved areas. Subperiosteal calcification may be observed in roentgen studies. The pathologic features are proliferative periostitis with subperiosteal new bone formation.

In the commonly observed simple clubbing of the fingers and toes, the involvement is one of soft tissue proliferation over the terminal phalanges. Osseous change is unusual. When osseous changes of atrophy and absorption of the terminal phalanges do occur, they are a late manifestation. By definition, in hypertrophic pulmonary osteoarthropathy

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From the Division of Medicine, University of California School of Medicine, and the University of California Medical Service, San Francisco City and County Hospital, San Francisco.

skeletal changes are invariable.[7] However, whether simple clubbing is an early stage of hypertrophic pulmonary osteoarthropathy or a separate entity is not decided. Witherspoon[11] concluded that the prevailing evidence supports the former hypothesis. Weens and Brown[10] stated that in cases of clubbing in which there was bony absorption of the terminal phalanges, the absorption was preceded hy hypertrophic changes. They presented reports of two cases to illustrate the point. Temple and Jaspin,[8] however, observed no such changes. They believed that no bony changes occur in simple clubbing of the fingers, and pointed out that changes such as those described can be normal variants. Cases of Marie's disease (as in the present instance) in which cluhhing of the fingers and toes was not present have been reported.[7] It is generally believed that clubbing can occur as a separate entity or as an integral part of Marie's disease. Pattison and co-workers[7] stated that the fact that osseous change is not a constant finding in simple clubbing differentiates it from hypertrophic pulmonary osteoarthropathy, in which there is always osseous change.

Hypertrophic pulmonary osteoarthropathy is most frequently secondary to disease of the thoracic and abdominal viscera. However, it has been described in other conditions, including thyroid disease[9] and chronic myelogenous leukemia.[8] The primary disease is most commonly pulmonary and may he either neoplastic or infectious in character. However, the syndrome is also associated with cardiac, hepatic and gastrointestinal diseases, such as subacute bacterial endocarditis, congenital heart disease, cirrhosis, non-tropical sprue[8] and mediastinal tumors. A similar syndrome may occur as a manifestation of primary idiopathic disease (chronic idiopathic hypertrophic osteoarthropathy;[1] idiopathic familial osteophytosis[4]) predominantly in males at puberty and without associated visceral disease. This entity is felt to be familial[4] and is quite rare.

The clinical manifestations of hypertrophic pulmonary osteoarthropathy include pain and tenderness of the bones and joints and hypertrophy and edema of the soft tissue overlying involved bone. The onset is usually insidious, but in rare instances may be rapid.[6]

Often, as in the case presented here, the involvement of the extremities is the first clue to the diagnosis. This is more often true in neoplastic conditions than in those of inflammatory nature, where the primary disease is usually evident long before the onset of hypertrophic osteoarthropathy.[7]

Craig[3] diagnosed Marie's disease in three cases previously diagnosed as rheumatoid arthritis and in one diagnosed as acromegaly. (Marie's original description was written to clarify acromegaly and to define conditions which may be confused with it.[5])

Pattison and co-workers[7] pointed out the dramatic regression of symptoms and the swift objective improvement following removal of the primary lesion either surgically or by x-ray therapy. Within a matter of hours, the pain and swelling usually subside. Follow-up radiologic studies over a long period have not been carried out in many cases, and whether the roentgenologically ohservable changes regress or persist will require further study and observation.

The pathogenesis of hypertrophic pulmonary osteoarthropathy remains a mystery.[11, 8, 7] Endocrine,[5] vascular[2] and chemical[4] factors have been investigated without yielding an answer. Some change in the peripheral blood flow and consequent alteration in oxygenation of tissues seems to be the most likely explanation at present.[2]

The condition may be present without producing symptoms or signs. Therefore, it would probably be noted more frequently if detailed x-ray studies of the extremities were done in all patients with carcinoma of the lung.[8] The value of recognizing this condition, however, lies in the occasional case in which it leads to the early diagnosis and treatment of pulmonary neoplasm.

REPORT OF A CASE

A white man 65 years of age noted swelling of both legs up to the knees ten days before admittance to the hospital. For three days the swelling had been so severe and the pain so intense that the patient had been bedridden at home. The patient had smoked two packages of cigarettes daily for about 40 years. For the past 20 years he had a "cigarette cough," which was productive of small amounts of yellowish mucus when he awakened in the morning. For the preceding year the patient had noted nocturnal wheezing that was relieved by sitting up and by using a proprietary gargle, after which sleep was undisturbed. No loss of weight had occurred. There were no other symptoms referahle to the lungs.

The patient was well developed, appeared to be well nourished and in no distress. The hlood pressure was 120 mm. of mercury systolic and 75 mm. diastolic, the temperature 98.6° F., the pulse rate was 90 per minute, and respiration 24 per minute. Both legs were greatly swollen from the knees down, with a firm, pitting edema. The skin over this area seemed somewhat warmer than elsewhere, and there was definite tenderness of the ankles and over the shafts of the tihiae. There was no tenderness or thickening of the veins of the legs. Homan's sign was not present and no venous collateral circulation was evident. There was no clubbing of the fingers or toes.

Both hands seemed large and wide, but the patient stated that they had always been so. There was no tenderness or edema of the upper extremities.

Wheezes and a few crepitant rales were heard over the upper lobe of the left lung.

The circulation time, arm to tongue, with 10 per cent magnesium sulfate, was 20 seconds; arm to lung, with ether, it was 6 seconds. The venous pressure was 9 cm. of water. The hemoglobin content was 11 gm. per 100 cc. of blood. Leukocytes numbered 10,500 per cu. mm.—80 per cent filamented polymorphonuclear leukocytes, 6 per cent non-filamented polymorphonuclear leukocytes, 2 per cent eosinophilic leukocytes and 12 per cent lymphocytes. Results of the urinalysis were normal. The serum albumin content was 4.1 gm., and the serum globulin 3.2 gm. per 100 cc. The non-protein nitrogen content of the blood was 31 mg. per 100 cc. Sputum was negative for tubercle bacilli on three examinations. The vital capacity was 2,200 cc. Stool specimens were negative for occult blood. The femoral arterial blood oxygen saturation was 74 per cent and the femoral venous blood oxygen saturation was 68 per cent. The patient's hands, suspended in water, displaced 550 cc.

In x-ray films of the chest a mass in the hilum of the left lung and segmental atelectasis of the superior anterior segment of the upper lobe consistent with bronchogenic carcinoma or pulmonary tuberculosis were noted. Studies were made of the sputum by the Papanicolaou technique on three occasions, and cells suspicious of malignant disease were noted twice and definitely malignant cells once. In hronchoscopic examination the corina of the upper lobe of the left lung was observed to be congested and thickened, with a copious secretion coming from the bronchus of the upper lobe. A biopsy specimen and material for a smear were taken. Malignant cells were noted in the smear, and non-specific inflammation in the biopsy specimen. In x-ray

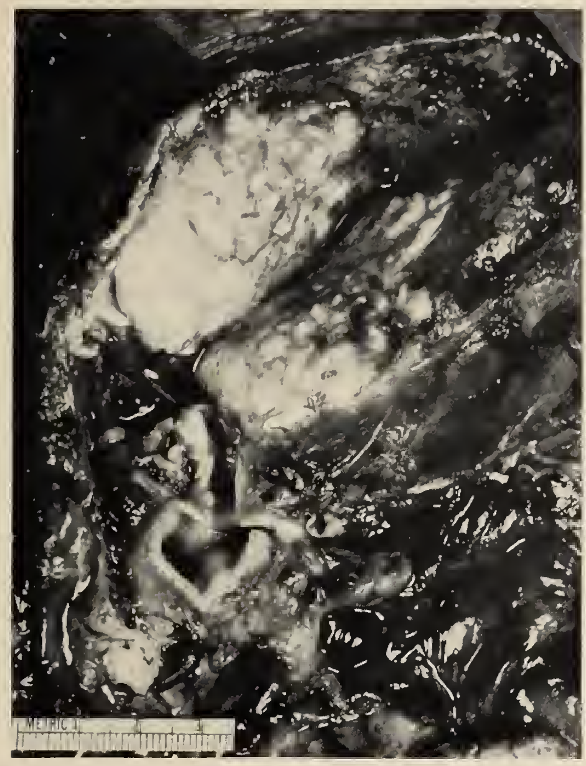

Figure 1.—Pathological specimen, left lung.

films of the extremities, subperiosteal new bone formation was noted in the tibiae, fibulae and distal ends of the femora.

The patient was treated with penicillin and aminophyllin and prophylactically with quinidine (to prevent arrhythmia) prior to thoracotomy. A bronchiogenic carcinoma involving the entire upper lobe of the left lung and invading the lower lobe and the hilum was observed at operation. Left pneumonectomy was done but it was impossible to remove all the involved tissue from the mediastinum. Upon pathological examination the upper lobe of the lung was noted to be enlarged and firm. On the cut surface of the upper lobe there was an area of firm, gray-white, homogeneous tissue, not too well circumscribed and about 5 cm. in diameter (Figure 1). Microscopically, large sheets of pleomorphic cells with pyknotic nuclei and many mitotic figures were noted. Much inflammation and necrosis were present. Malignant cells were present in the bronchial lumen. The pathological diagnosis was bronchogenic carcinoma.

The swelling and tenderness of the legs subsided completely the first postoperative day (Figure 2). The hands displaced 450 cc. of water. The patient stated that his legs and hands were of normal size and that, with retrospection, he recognized that his hands had been swollen. Subperiosteal calcification was noted in x-ray films ten days and one month after operation. A month postoperatively there was no recurrence of symptoms and the patient felt well.

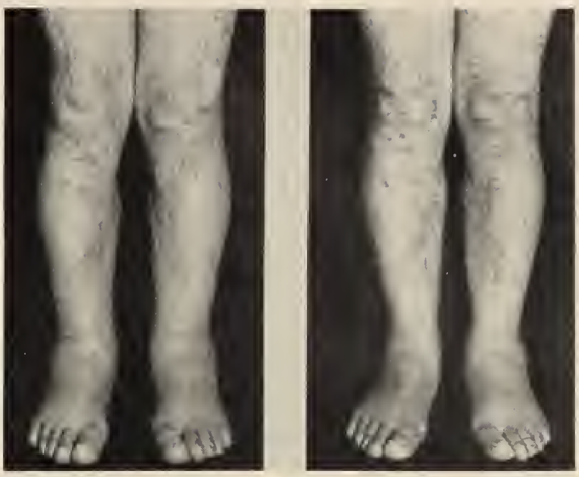

Figure 2.—*Left*, preoperative; *right*, postoperative.

SUMMARY

A case of bronchogenic carcinoma is presented, in which the presenting symptoms were due to hypertrophic pulmonary osteoarthropathy. Following pneumonectomy there was complete regression of the soft tissue swelling, without evidence of any change in the skeletal manifestations. In cases of swelling and pain of the extremities of obscure origin, this entity should be considered and a search made for visceral, especially pulmonary, disease.

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California MEDICINE

EDITORIAL

The Medical Services Commission

As the term itself implies, and to the extent that its growth and development are the concern of both a profession and a business, health insurance is a hybrid creature torn between the ethics, traditions and customs of medicine and the practices and standards of the insurance industry. When, to the term "health insurance" is added the modifier "compulsory," the creature degenerates from hybrid to mongrel, and the conflicts of interest between profession, business and bureaucracy increase from the warm to the inflammatory.

Most of the roadblocks in the orderly development of voluntary health insurance have been the result of the basically antithetic points of view of the medical profession and the insurance business and the consequent inability of each to see the big problems of health insurance through the eyes of the other. Good medicine may well seem to be poor business, and the reverse may also sometimes be true.

It is obvious that voluntary health insurance can succeed only if it be based both on sound business practices and on valid ethical principles of good medicine. But, too often, the seemingly only possible solution to any given problem of health insurance fulfills only one of these criteria.

The medical profession has accepted health insurance as a modern social need. Having done so, it has assumed a degree of responsibility to make it work. And obviously, if it is to work, these apparently irreconcilable conflicts between the traditions and ethics of medicine and the standards of good business must somehow be resolved. To resolve them, the medical profession must first determine those elements of ethical medical practice with which health insurance, to be good and acceptable, must not interfere. Further, it must delineate those modifications of the traditional pattern of medical practice which the profession can accept as being necessary if the insurance principle is successfully to be applied to health costs. So far, then, as medicine is concerned, the basic questions are: Of which of its jealously guarded customs and traditions must the profession accept modification, and upon which must it stand as upon the ramparts, permitting no breach of their tenets?

To forge an instrument to pursue these answers, the House of Delegates of the California Medical Association at its annual session in April 1952 adopted a resolution creating a Medical Services Commission. To quote the resolution: "... a permanent Medical Services Commission ... is hereby created whose function it shall be to study, keep records upon and recommend action to the California Medical Association and its component bodies on all types of prepaid medical care, including C.P.S., insurance company plans, industrial accident schedules, union labor plans, voluntary, compulsory, governmental and non-governmental plans ..." The Commission is to consist of nine members, serving staggered terms of three years. That Com-

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mission has been appointed, organized and is now functioning.

At the beginning of its work, the Commission will undoubtedly lean heavily on the enormous amount of relevant and already codified data accumulated by the still-functioning C.M.A.-C.P.S. Study Committee. But, to serve its highest purpose, the Commission must distill from this data good answers to the question of what role the medical profession should and must play in the broad socioeconomic field of health insurance.

May we hope, or perhaps might we better pray, that the Medical Services Commission will measure up to its opportunities and its responsibilities—the manner and degree of their fulfillment may well shape in large part the future of the private practice of medicine.

MEDICAL SERVICES COMMISSION

The members of the Medical Services Commission, recently appointed in compliance with a resolution passed by the House of Delegates, are:

		Term Expires
Leslie Magoon, M.D., chairman	San Jose	1955
Ralph Teall, M.D., vice-chairman	Sacramento	1955
Hollis L. Carey, M.D.	Gridley	1955
Henry Gibbons III, M.D., secretary	San Francisco	1954
Edward C. Rosenow, M.D.	Pasadena	1954
H. Gordon MacLean, M.D.	Oakland	1954
E. R. Lambertson, M.D.	Los Angeles	1953
James B. Irwin, M.D.	San Diego	1953
E. Eric Larson, M.D.	Los Angeles	1953

LETTERS to the Editor . . .

I am writing you with reference to the article "Relationship of Delivery Date to Predicted Date," by Dr. Edward Liston, California Medicine, 76: 395, June 1952. I feel that Dr. Liston's conclusion, "the data confirm a clinical impression that delivery is twice as likely to be late as early," is a rather devious statement of the facts he observed. It would seem more fair to state that the prediction of delivery date as 280 days after the first day of the last menstrual period was in error, and that the date should be chosen as either 283 or 284 days. In this case, the median point of the data would be more exactly expressed. In view of the common tendency of humans to be impatient, I suppose it would be better to use 284 days so that a few more people would deliver early than late. Judging by the slight irregularities in the data submitted, I would think that 1300 consecutive deliveries are probably too few on which to base such conclusion in any event, since a smooth curve of the normal distribution type would be expected. A series of perhaps ten times this number might give a better evaluation of the point Dr. Liston makes, although it may well be correct that a prediction of 280 days is too few for the average woman.

I am dropping this note to you in the interest of better statistical practice; I am sending Dr. Liston a copy, but whether you choose to publish it or not does not appear to me to be of any great importance.

Lewis G. Jacobs, M.D.,
Oakland

In reply to Dr. Lewis G. Jacobs' letter, I realize that the delivery dates of women in Palo Alto do not "prove" a universal rule valid, for example, in London or Shanghai. The figures I collected do what they were expected to do—confirm to my satisfaction a strong pre-existing clinical impression that more women deliver after the standard predicted date than before the standard predicted date which is accepted as 280 days after the first day of the last menstrual period.

If Dr. Jacobs wishes to change the standard prediction tables to a 284 day basis, I have no objection. The chart suggests, however, that 280 days is a good enough rule of thumb since it seems to be in the middle of the six-week period in which delivery usually takes place.

Dr. Jacobs writes, "in the interest of better statistical practice." After consulting an authority on statistics and forecasting, I find that no apology is necessary for my "statistical practice" in this instance. The data were taken at random; they were adequate in number; and they produced a sufficiently smooth curve. Dr. Jacobs makes the assumption that with ten times as many cases "a smooth curve of the normal distribution type would be expected." There is no statistical expectation that a bell curve, which applies to the distribution of purely chance characteristics, would necessarily apply to a natural phenomenon such as the onset of labor. Multiplying the cases by ten or by a hundred would not be likely to change the character of the skewed curve produced by 1,300 cases to a symmetrical bell curve or any other type of curve.

Edward Liston, M.D.,
Palo Alto

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 394th Meeting of the Council of the California Medical Association, San Francisco, June 21, 1952.

The meeting was called to order by Chairman Shipman at 9:30 a.m., Saturday, June 21, 1952, in Room 210 of the St. Francis Hotel, San Francisco.

Roll Call:

Present were President Alesen, President-elect Green, Councilors Wheeler, Loos, Sampson, Morrison, Dau, Montgomery, Lum, Bostick, Pollock, Frees, Carey, Shipman, Kirchner, Varden and Heron; Secretary Daniels and Editor Wilbur.

Absent for cause: Speaker Charnock, Vice-Speaker Bailey, Councilors West and Ray.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Pettis, Gillette and Clancy of C.M.A. staff; legal counsel Hassard; Mr. Ben H. Read, executive secretary of the Public Health League of California; Doctor Dwight H. Murray, chairman of the Committee on Public Policy and Legislation; Doctor Donald Cass, Mr. William M. Bowman, Mr. Thomas Hadfield and Doctor Francis T. Hodges of California Physicians' Service; Mr. Ned Burman of public relations counsel, and county society executive secretaries Waterson of Alameda-Contra Costa, Everett Bannister of Orange, William T. Nute of San Diego and Boyd Thompson of San Joaquin.

1. *Minutes for Approval:*

(a) On motion duly made and seconded in each instance, minutes of the 389th to 393rd, inclusive, meetings of the Council, held April 26 through April 30, 1952, were approved.

(b) On motion duly made and seconded, minutes of the 231st meeting of the Executive Committee, held April 30, 1952, were approved.

2. *Membership:*

(a) A report of membership as of June 19, 1952, was received and ordered filed.

(b) On motion duly made and seconded, members (1,105) whose 1952 dues had been received since April 30, 1952, were voted reinstatement.

(c) On motion duly made and seconded in each instance, five applicants were voted Associate Membership. These were: John L. Barritt, Leo Hollister, and William Reilly, San Francisco County; Robert M. Manson and John B. Peschau, Jr., Santa Clara County.

(d) On motion duly made and seconded in each instance, nine applicants were voted retired membership. These were: Robert E. Grogan and John W. Hopkins, Los Angeles County; Walter P. Winters, San Diego County; Frank Hinman and William J. Kerr, San Francisco County; K. W. Hidy, San Joaquin County; Albert John Swanson, Santa Barbara County; Stanley Dougan, and Edward Newell, Santa Clara County.

(e) On motion duly made and seconded in each instance, sixteen applicants were granted a reduc-

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tion of dues because of illness or postgraduate study.

(f) Discussion was held on the application of one physician for membership in a component society. It was pointed out that the county societies are the sole judges for admission of applicants into membership and, on motion duly made and seconded, it was voted that the secretary prepare a letter to that effect to the applicant.

(g) A request from the Los Angeles County Medical Association for the appointment of a referee in two disciplinary proceedings was discussed. The Executive Committee had previously authorized such appointment and on motion duly made and seconded, the Council voted approval of the action and the referee selected by the Executive Committee.

(h) An appeal from the decision of the Council of the Alameda-Contra Costa Medical Association in a disciplinary proceeding was discussed. On motion duly made and seconded, it was voted to notify the appellant and the component society that the Council would hear the appeal on the date of the next Council meeting scheduled to be held in San Francisco.

3. *Financial:*

(a) A report of bank balances as of June 19, 1952, was received and ordered filed.

(b) A report of revenues and expenditures for May and for the eleven months ended May 31, 1952, was received and ordered filed.

(c) On motion duly made and seconded, unanimous approval was voted for a contribution of $1,000 to the World Medical Association, on the condition that the organization be advised that this action carried with it the express desire of the Association that no part of such funds be used in any way in support of proposed consolidated world government programs.

(d) A request from the National Society for Medical Research for a contribution was read and it was regularly moved, seconded and voted to acknowledge receipt of the request.

4. *Committee on Scientific Work:*

Discussion was held on proposals to offer an honorarium to guest speakers or to provide for the payment of travel expenses for their wives in attending Association meetings. It was agreed to continue on the present basis, which does not provide for either honoraria or payment of wives' travel expenses.

5. *Committee on Public Health and Public Agencies:*

Doctor Pollock discussed a proposed statement on District Hospitals, which had been drawn tentatively and for which several proposals had been made for amendments. Doctors Pollock and Carey were instructed to revise the original statement and, on motion duly made and seconded, the revised statement was approved. A copy is attached as a part of these minutes.

6. *California Physicians' Service:*

Doctor Francis T. Hodges, secretary; Mr. William M. Bowman, executive director, and Doctor Donald Cass, president of C.P.S., reported on the current status of the organization, distributed a financial report and discussed the situation concerning abuses in billings by some physicians. It was brought out that adverse public relations reactions may be engendered by editorials in county society bulletins. A motion was made and seconded, to suggest to county societies that the services of the C.M.A. public relations staff would be available to consider the public relations aspects of such editorials. On a supplementary motion, it was seconded and voted to table this motion.

A letter from Doctor Wilbur Bailey, chairman of the C.P.S. Study Committee was read and discussed. On motion duly made and seconded, it was voted to approve one proposal of the committee and the C.P.S. Board of Trustees, which calls for the Council to go on record as follows:

"We further recommend that each county medical society maintain a committee to function as an internal self-disciplining agency available to C.P.S., insurance companies, the members of the county society, and to the public generally for mediation and, if necessary, action in instances of abuse. This committee should also serve to provide liaison between C.P.S. and the county medical society."

On motion duly made and seconded, approval was voted of a second recommendation, which calls for "the Council of the C.M.A. [to] undertake to negotiate with the Boards of Trustees of Blue Cross plans in California and the California Hospital Association to achieve cooperation between Blue Shield and Blue Cross necessary to the best interests of the patient . . ." An amendment to this motion, seconded and voted, called for the initial appointment of a committee of three members from each organization as a starting group.

7. *Nursing:*

Doctor Howard Naffziger reported on a meeting held by his Committee on Nursing with a group of practical nurses who wish to have their own licensing board established. Public hearings are now being held on proposed regulations to govern the licensing of vocational nurses, some of the proposals being held to be inimical to the interests of the public in that the regulations will make the field of vocational nursing unattractive to students contemplating this field and will do very little toward alleviating the shortage of bedside nurses. On motion duly made and seconded, it was voted that the Association be represented at these hearings and that attempts be made to secure vocational nurse regulations which would offer a better opportunity for students to secure practical training and registration.

8. *Blood Banking:*

Doctor Donald C. Harrington of Stockton addressed the Council on the blood banking situation there, where the American Red Cross has expressed a willingness to meet with C.M.A. officers to discuss the possibility of the San Joaquin County Medical Society taking over the present Red Cross blood center under terms to be arranged on a mutually acceptable basis. On motion duly made and seconded, it was voted to refer this question to the Executive Committee, which, if members of the Blood Bank Commission are agreeable, could proceed to arrange such a meeting.

9. *State Department of Public Health:*

Doctor Wilton L. Halverson, state director of public health, reported that polio cases are running at about the equal of 1951. He also stated his desire to confer with the Association's legislative representatives on matters of local health department assistance to meet epidemic threats, radiological safety measures and questions on the continuance or discontinuance of current premarital examination requirements.

10. *Committee on Postgraduate Activities:*

On motion duly made and seconded, it was voted to appoint Doctor Lester S. Gale of Bakersfield a member of the Committee on Postgraduate Activities, to succeed Doctor Thomas Collins, resigned to reenter active military service.

11. *Advisory Planning Committee:*

Mr. Hunton reported on a meeting of the committee the preceding day and requested the Council to appoint Mrs. Jane Algeo Watson, executive secretary of the Sacramento Society for Medical Improvement, as a member of the committee. On motion duly made and seconded, this appointment was voted.

Mr. Hunton also called attention to a pamphlet entitled "Health Record" which may be reproduced and distributed to parents of grammar and high school students. The committee recommended that copies of this pamphlet be distributed in several key counties on a trial basis as a part of the Association's public relations program.

Mr. Clancy, director of public relations, discussed the need for arriving at a code of conduct to govern physicians who may be asked to appear on television programs. Such a code is under draft at present and will be brought before the Council for approval.

12. *1952 House of Delegates' Actions:*

It was regularly moved, seconded and voted that the President appoint a nine-member Medical Services Commission, subject to the approval of the Executive Committee.

On motion duly made and seconded, a resolution dealing with the Crippled Children's Act was voted referred to the Committee on Public Health and Public Agencies.

13. *Delegates to American Medical Association:*

On motion duly made and seconded, the resignation of Doctor Russel V. Lee as an alternate delegate to the A.M.A. was accepted. Doctor Lee already serves as an A.M.A. delegate from the Section on Military Medicine.

14. *Legal Department:*

Mr. Hassard reported on a proposed piece of legislation which would establish a new licensing board in chiropody. He also reported on work being done on proposed licensure for psychologists.

15. *Public Policy and Legislation:*

Doctor D. H. Murray and Mr. Ben Read reported on the results of the primary election and stressed the importance of physicians' participating in the final elections. Report was also made on the appearance of Councilor Morrison before an interim committee considering the establishment of a rehabilitation center. It was regularly moved, seconded and voted that Doctor Morrison continue to represent the Council on this matter.

Discussion was held on a program being promoted by one physician to secure signatures to a pledge to uphold traditional American ideals of free competitive enterprise. On motion duly made and seconded, it was voted to approve the principles cited in this proposal.

On motion duly made and seconded, it was voted to purchase 5,000 pamphlets on American ideals for distribution by the Woman's Auxiliary.

16. *C.M.A. Mailing List:*

(a) On motion duly made and seconded, it was voted to permit the San Francisco Heart Association to use the Association's mailing list to send out an announcement of a scientific symposium.

(b) Discussion was held on a request for the Association to mail a new pediatrics pamphlet to some 7,500 physicians in the state. On motion duly made and seconded, it was voted to send these pamphlets to the county societies for distribution at meetings or through other means.

17. *Conference on Training of Medical Care Administrative Personnel:*

Doctor Daniels reported on a conference planned for June 26-27 at the School of Public Health, University of California, on the training of medical care administrative personnel. It was agreed that the Association should observe this conference.

18. *Time and Place of Next Meeting:*

It was agreed that the next meeting of the Council be held in Los Angeles on September 6, 1952.

Sidney J. Shipman, M.D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

Statement of Principles on District Hospitals

(As approved by the Council of the California Medical Association, June 21, 1952)

1. The Council recognizes the existence of a number of hospital districts which have built or may in the future construct hospitals. In addition there are many small hospitals, which have been constructed by funds voluntarily contributed by the community. These hospitals, operating, building or planning, are a part of the present and future economy of the State of California.

2. Since district and small community hospitals and their professional staffs have the same interest in high quality of patient care as do hospitals in larger cities, hospitals in smaller cities and physicians practicing in them have a fundamental responsibility to maintain high professional and other standards in these hospitals.

3. The Council believes the district hospitals should be operated on the highest possible plane for the care of the sick and the protection of the public under rules and regulations to meet the standards of approval by American Medical Association and/or American College of Surgeons. The Council will also encourage local county medical societies to assist in the maintenance of acceptable standards in all hospitals in their respective areas.

4. Toward this end the Council will support legislation which it believes to be in the public interest and will oppose legislation which it considers inimical to that interest.

5. District and community hospitals should operate on a self-sustaining basis.

6. The Council believes that district hospitals should be planned with a realistic appraisal of the current and immediately foreseeable needs of the district and that where a question exists as to the advisable size of the hospital, plans should be made on the basis of minimum initial construction with provision for future additions.

7. The Council believes that district hospitals should be built and maintained as general hospitals for the care of the sick and should not endeavor to provide for medical indigents or others who are provided for under other auspices, such as county hospitals.

8. The Council believes the availability of an adequate staff of doctors of medicine is of utmost importance in considering location of district and community hospitals. The appointment of adequate consulting staffs to these institutions is also recommended.

9. The Council recognizes the autonomy of the component county societies of the California Medical Association and their individual members and their right to approve or oppose, on grounds of a local nature, any proposed activities by hospital districts. In this connection, the California Medical Association refrains from entering into any hospital district proposals, whether they be for formation, financing or expansion purposes, except on the express request of the county medical society in the district.

Proposed Constitutional Amendments

(First Publication)

Following are the proposed amendments to the Constitution of the California Medical Association that were introduced at the 1952 Annual Session and were carried over for action at the Interim Session. Both have been referred to Reference Committee No. 4, which is to make its report upon them available to delegates at least 30 days before the opening of the 1952 Interim Session in San Francisco, December 6, 1952. California Medical Association members who wish to record opinions on any of the proposed amendments may send them to the chairman of Reference Committee No. 4, Arthur A. Kirchner, M.D., 2007 Wilshire Boulevard, Los Angeles.

Submitted by Lyle G. Craig for Reference Committee No. 3, Interim Session, December, 1951.

Resolved, That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 1, the first sentence be amended by deleting the word "regular" and inserting in its stead the word "Annual," so that this first sentence shall read:

"At each Annual Session the House of Delegates shall, by a majority vote, fix the annual dues to be paid by members of the Association for the ensuing calendar year."

The remainder of Section 1 shall be unchanged.

* * *

Submitted by Lyle G. Craig for Reference Committee No. 3, Interim Session, December, 1951.

Resolved: That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 5, the first sentence be amended by striking out the word "regular" and inserting in its stead the word "Annual," so that the first sentence shall read:

"At each Annual Session of the House of Delegates the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year."

The remainder of Section 5 shall be unchanged.

In Memoriam

AMOS, CHARLES W. Died in Long Beach, May 26, 1952, aged 54. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1935. Licensed in California in 1944. Dr. Amos was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

BAYLIS, JOHN N. Died in San Bernardino, June 14, 1952, aged 87. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1886. Licensed in California in 1887. Dr. Baylis was a member of the San Bernardino County Medical Society, the California Medical Association, and the American Medical Association.

✣

BERGER, MAX M. Died April 30, 1952, aged 44, of coronary artery disease. Graduate of Rush Medical College, Chicago, 1935. Licensed in California in 1942. Dr. Berger was a member of the San Francisco Medical Society, an associate member of the California Medical Association, and a member of the American Medical Association.

✣

BERWALD, WILLIAM P. E. Died in Patton, June 11, 1952, aged 41. Graduate of Syracuse University College of Medicine, New York, 1935. Licensed in California in 1949. Dr. Berwald was a member of the San Bernardino County Medical Society, the California Medical Association, and the American Medical Association.

✣

CRESS, PETER J. Died in Garmisch, Germany, May 30, 1952, aged 70, of coronary occlusion. Graduate of Marquette University School of Medicine, Milwaukee, 1908. Licensed in California in 1942. Dr. Cress was a member of the Yuba-Sutter-Colusa County Medical Society, the California Medical Association, and the American Medical Association.

✣

DIDIER, FREDERICK W. Died in Marysville, June 21, 1952, aged 80, of myocardial infarction. Graduate of George Washington University School of Medicine, Washington, D. C., 1904. Licensed in California in 1922. Dr. Didier was a member of the Yuba-Sutter-Colusa County Medical Society, the California Medical Association, and the American Medical Association.

✣

EATON, H. DOUGLAS. Died in Los Angeles, May 24, 1952, aged 66, of coronary thrombosis. Graduate of Columbia University College of Physicians and Surgeons, New York, 1911. Licensed in California in 1921. Dr. Eaton was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

GUSTAFSON, AXEL W. Died in Gustine, May 14, 1952, aged 71. Graduate of the College of Physicians and Surgeons, Los Angeles, 1922. Licensed in California in 1922. Dr. Gustafson was a member of the Merced County Medical Society, the California Medical Association, and the American Medical Association.

✣

HABER, WILLIAM J. Died in San Francisco, June 24, 1952, aged 75. Graduate of Columbia University College of Physicians and Surgeons, New York, 1903. Licensed in California in 1906. Dr. Haber was a retired member of the San Francisco Medical Society, and the California Medical Association.

✣

PURDY, ROLLA C. Died in Los Angeles, May 26, 1952, aged 68. Graduate of Chicago College of Medicine and Surgery, Illinois, 1908. Licensed in California in 1924. Dr. Purdy was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

QUINN, THOMAS D'ARCY. Died in San Francisco, June 4, 1952, aged 77. Graduate of the University of California Medical School, Berkeley-San Francisco, 1902. Licensed in California in 1903. Dr. Quinn was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

ROBISON, LYMAN H. Died in Sherman Oaks, June 15, 1952, aged 68, of coronary artery disease. Graduate of Rush Medical College, Chicago, 1912. Licensed in California in 1925. Dr. Robison was a member of the Los Angeles County Medical Society, the California Medical Association, and the American Medical Association.

✣

TILLMAN, CARL-GUSTAF D. Died by drowning in Tomales Bay, June 1, 1952, aged 42. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1938. Licensed in California in 1938. Dr. Tillman was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 24-27, 1953

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) not later than November 15, 1952.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1952. (No exhibit shown in 1952, and no individual who had an exhibit at the 1952 session, will be eligible until 1954.)

SCIENTIFIC PAPERS . . .

. . . SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy . . . . *Norman Shure*
6317 Wilshire Boulevard, Los Angeles 48

Anesthesiology . . . . *Joseph H. Failing*
475 Buena Vista Street, San Marino 9

Dermatology and Syphilology . . . *Frances Keddie*
300 Homer Avenue, Palo Alto

Eye, Ear, Nose and Throat—

Eye . . . . *Alfred R. Robbins*
1930 Wilshire Boulevard, Los Angeles 5

ENT . . . . *Francis A. Sooy (Asst. Sec.)*
490 Post Street, San Francisco 2

General Medicine . . . . *William D. Evans*
10655 Riverside Drive, North Hollywood

General Practice . . . . *A. Bradford Carson*
1515 Fruitvale Avenue, Oakland 1

General Surgery . . . . *Arthur C. Pattison*
960 East Green Street, Pasadena

Industrial Medicine and Surgery . *Dan Kilroy (Asst. Sec.)*
3300 Third Avenue, Sacramento

Obstetrics and Gynecology . . . *Harold K. Marshall*
229 North Central Avenue, Glendale 3

Pathology and Bacteriology . . . . *A. R. Camero*
679 South Westlake Avenue, Los Angeles 5

Pediatrics . . . . *Clement J. Molony*
416 North Bedford Drive, Beverly Hills

Psychiatry and Neurology . . . . . *A. E. Bennett*
2000 Dwight Way, Berkeley 4

Public Health . . . . *Charles E. Smith*
U. C. School of Public Health, Berkeley 4

Radiology . . . . *Calvin L. Stewart*
2330 First Avenue, San Diego 1

Urology . . . . *James A. May*
2001 Fourth Avenue, San Diego 1

Q. & A. on C. P. S.

Question: Why is the documentary film, "The Doctor's Plan," available for presentation to hospitals, county medical societies, and C.P.S. physician staffs, important to these groups?

Answer: This worthwhile 30-minute movie, designed especially for a better understanding between C.P.S. doctors and their health plan, shows much of the daily routine in Blue Shield functions, as well as answers vital questions pertinent to these various professional staffs. Subject matter includes data on the processing and paying of claims; varied duties of the Physician Relations Department; steps showing the actual enrollment of a C.P.S. beneficiary member; the compiling of statistical information, and a full explanation of numerous contract benefits, as explained by C.P.S. field representatives to individuals contemplating membership in the Blue Shield Plan.

Please keep in mind the fact that this instructive film will be available to various physician and hospital staffs during the early part of September. Any group interested in having this movie shown may contact the Physician Relations Department of either the Los Angeles or San Francisco office of C.P.S.-Blue Shield.

Question: What additional benefits are now being given to members who hold Medical-Care-While-Hospitalized coverage, as a result of the recent contract changes?

Answer: Prior to the time when this important benefit was increased, all C.P.S. members had to pay for the first two visits of their doctor to the hospital. Now, benefits for this coverage have been extended to pay for the doctor's first visit to the hospital where the C.P.S. member is a registered bed-patient. It is to be stressed, however, that this coverage does not apply to diagnostic or medical observation as such.

Question: Some of my patients have asked me why they receive less coverage and benefits, after leaving a group plan, and become enrolled in the Direct Payment Plan. Would you explain in more detail, please?

Answer: C.P.S.-Blue Shield has extended the extra privilege to members who have left a group to join the Direct Payment Plan. The benefits under this contract grant a person life membership in a plan providing the most essential protection against critical injuries or illnesses. However, the wider spread of risk in a group, giving each individual member "more protection at less cost," cannot necessarily apply to a contract such as Direct Payment. Therefore, it means in effect, that dues payments must be adjusted proportionately higher for this individual coverage. An additional reason affecting the dues structure for C.P.S. members is the consequence of the inflationary spiral on hospital and professional costs in general during more recent years.

Question: A doctor's secretary asks, "Is it necessary for us to show the age of a member on C.P.S. billing form No. 9?"

Answer: It is requested that the age be placed on Form No. 9 in order that accurate identification of the member may be made. This is essential when two members of the same family have identical names. For example, in the C.P.S. fee schedule, there are two fees listed for tonsillectomies and adenoidectomies. The fee paid depends on whether the C.P.S. member is over or under the age of 15. Also, it is important to remember that a beneficiary member and dependents may receive different benefits.

Question: How often should I send my bills for most efficient payment?

Answer: You should bill C.P.S. monthly whether a case is completed or not, in order to expedite payment. Your statements should reach the C.P.S. billing department by the 15th of each month.

Question: How much postoperative care is available on the recent liberalization of the surgical contract?

Answer: Surgical contract benefits now provide postoperative care, for as long as necessary, if membership is continued in good standing. It should be noted that C.P.S. defines postoperative care contractually as care directly related to the operative wound and such complications as are directly related by pathology and treatment to the operation itself. This does not include a condition stimulated by an operation, such as mental conditions, anemia, glandular deficiency, or general debility. Also not included are services primarily for rest cure, medical observation, diagnostic examinations, convalescence and rehabilitation following surgery.

Question: A doctor treating several veterans under the "Veterans Home Town Care Program," asks, "How can I be reimbursed for medication used during routine office calls?"

Answer: The cost of inexpensive drugs is considered to be included in the fee for the routine office visit. However, these or expensive drugs may be obtained by the veteran on your written prescription in the same manner as those medications prescribed for the veteran's home use.

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. Wendell Stanley, director of the Virus and Biochemistry Laboratory, University of California, Berkeley, recently was appointed to a four-year term on the National Cancer Advisory Council for the National Cancer Institute.

BUTTE

Dr. Richard C. Murphy, formerly assistant health officer for the San Joaquin Local Health District, was appointed health officer of Butte County, effective August 1. Dr. Murphy takes the place of **Dr. John Philp** who recently resigned the post to become assistant chief of the division of local health service of the California State Department of Public Health.

LOS ANGELES

Dr. J. M. Furstman, head of the Santa Monica district office of the Los Angeles County Health Department for the past five years, retired last month after 45 years of service in public health.

* * *

Dr. W. Henry Atkinson of Los Angeles was elected president of the **California Medical, Dental and Pharmaceutical Association** at the recent annual meeting of the organization in Oakland. Helen Guenveur, D.D.S., of Berkeley, was elected president-elect, Dr. Daniel Collins, San Francisco, vice-president; E. P. Giddings, Ph.C.M.S., Los Angeles, secretary; Dr. Joel Lewis, Berkeley, assistant secretary; and Dr. Clay Wilson, Berkeley, treasurer.

SANTA CLARA

Appointment of **Dr. John M. Chatton,** director of the out-patient clinic of the University of California Hospital in San Francisco, as Santa Clara County director of medical institutions was announced recently by Howard W. Campen, acting executive of the county. Dr. Chatton succeeded **Dr. Henry E. Dahleen,** who retired.

A special committee of the Santa Clara County Medical Society assisted in the selection of Dr. Chatton for the post.

* * *

After 42 years of separate existence the Palo Alto Health Department last month became a division of the **Santa Clara County Health Department.** Simultaneously the retirement of Louis Olsen who had been the city health officer for 39 years, and who approved the new arrangement, was announced.

Under the new set-up Dr. Lydia Verborg, who for some time has supervised well-child conferences in Palo Alto, was appointed medical officer in charge of the Palo Alto office of the County Health Department.

Dr. W. Elwyn Turner, county director of public health, said employees of the former Palo Alto Health Department would remain in their jobs as county employees.

SUTTER

Dr. Frank J. Dulian of Orange County has been appointed director of Sutter County Hospital to take the place of Dr. Stewart C. Loeb who resigned last month.

GENERAL

Grants totalling $23,730 for 1952-53 **to aid six research projects** in three California institutions were announced recently by the American Heart Association. Included in a total of 72 projects for which grants of $361,522 were approved, the California investigations supported were listed as follows: University of California, Berkeley, two awards for research by David M. Greenberg, one of $5,250 for study of protein metabolism and its relation to high blood pressure and hardening of the arteries, and one of $525 for research on the relation of certain hormones to diseases of the heart and blood vessels; University of California, San Francisco, $3,675 for a study, by Isidore S. Edelman, of water distribution in patients with edema; Institute for Medical Research, Los Angeles, $3,780 for investigation, by Harry Goldblatt, of capillary circulation in renal hypertension produced experimentally in dogs; Mount Zion Hospital, San Francisco, two awards, one of $6,300 for study of the metabolism of cholesterol by Meyer Friedman, and the other, $4,200, for investigation by Ray H. Rosenman, of the role of potassium in maintenance of blood pressure and in changes in blood vessels in presence of normal or high blood pressure.

* * *

Grants to aid two cancer control projects in California were awarded last month by the National Cancer Institute; $4,979 to Los Angeles County Hospital for development, by Dr. E. M. Butt, of a registry and library of tumor specimens for use by pathologists and other physicians; and $26,500 to the University of California School of Medicine, San Francisco, for a study by Dr. Robert S. Stone to evaluate teaching, with regard to cancer, in medical schools.

* * *

The 17th annual assembly of the United States and Canadian chapters of the **International College of Surgeons** will be held in Chicago, September 2-5.

The Right Hon. Lord Thomas Horder, M.D., chairman of the Fellowship for Freedom in Medicine and member of the Council of the British Medical Association, will be the speaker at the convocation, to be held September 5, at which some 700 new fellows will be received into the college. His subject will be "Freedom in Medicine."

* * *

A series of articles on the **medical aspects of civil defense,** previously printed in the *Journal of the American Medical Association* under the sponsorship of the Council on National Emergency Medical Service, has been reproduced in booklet form. The booklets are available at 25 cents for a single copy and at 20 cents a copy for orders of 100 or more.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Psychiatry and Neurology—The Langley Porter Clinic.

Date: August 25 through October 31, 1952, ten weeks, full time.

Fee: Fee for the course is $200.

The course is particularly designed to prepare psychiatrists and neurologists for taking the examinations of the American Board of Psychiatry and Neurology.

Conference on General Surgery—Toland Hall, University of California Hospital.

Date: September 8 through 12, 1952.

Fee: $75.00.

This course is offered for the purpose of stressing the newer concepts, methods of diagnosis, treatment, and techniques in surgery. Instruction will consist of didactic periods, panel discussions and actual *Operative Demonstrations.* Class limited to 50.

Ophthalmology—Toland Hall, University of California Hospital.

Date: September 15 through 20, 1952.

Fee: $75.00.

This is a course for specialists. Group instruction with demonstration of patients will be given twice daily.

Chairman: Frederick C. Cordes, M.D.

Contact: Stacy R. Mettier, M.D., Head Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Postgraduate Courses for Practicing Physicians

Date: September 15-19, 1952.

All-Day Courses: Internal Medicine and Therapeutics; General Surgery and Surgical Anatomy; Cardiology.

Morning Courses: General Medicine; Fractures and Trauma to Soft Tissues; Obstetrics and Gynecology; Dermatology.

Afternoon Courses: Proctology; Pediatrics; Psychiatry; Arthritis and Rheumatic Diseases.

Fee: $75.00 for the combination of morning and afternoon course, or the all-day course (not covered by veterans' educational benefits).

Registration limited: Each physician may register for one morning and one afternoon course or one all-day course.

Contact: Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Internal Medicine—Course 830—Los Angeles County Hospital.

Date: September 15, 1952 through June 1, 1953, full time.

Fee: Fee for the course is $750. Mail check to University of Southern California, School of Medicine, Department of Internal Medicine, Box 158, 1200 North State Street, Los Angeles 33. Course limited to eight students; applications will be accepted until July 15, 1952.

Intensive Review of Internal Medicine—Course 855

Date: September 15 through September 26, 1952—8:30 a.m. to 12:30 p.m., Monday through Friday.

Fee: $50.00; applications accepted until August 1, 1952.

This course is offered for students preparing to take examination for the American Board of Internal Medicine.

Contact: Gordon E. Goodhart, M.D., Director Medical Extension Education, University of Southern California, 1200 North State Street, Los Angeles 33.

THE PHYSICIAN'S *Bookshelf*

BONE TUMORS. Louis Lichtenstein, M.D., Senior Pathologist, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles. The C. V. Mosby Company, St. Louis, 1952. 315 pages, 155 illustrations, $10.50.

The subject of bone tumors is one of endless interest to orthopedists, radiologists, surgeons and philologists. The present work should whet the appetence of all four groups. Following chapters dealing with the roentgenographic interpretation of skeletal lesions, and the author's classification of primary tumors of bone, there are twenty chapters dealing with the various benign, semi-benign and malignant lesions. The author's viewpoints are put forward with clarity and forcefulness, many being in conflict with traditional conceptions. Each chapter is followed by a bibliography. The final chapter deals with metastatic carcinoma involving the bony skeleton; there is an appendix on some non-neoplastic lesions of bone which may be mistaken for tumors.

The book is written by a pathologist and therefore deals extensively with the gross and microscopic appearance of bone tumors. The importance of careful roentgenographic examination is admitted, but the degree of reliance apparently placed by the author upon roentgen interpretation would suggest that he was exposed to less than adequate amounts of radiological consultation in his earlier years. The quality of some of the roentgenographic reproductions also suggests a lack of editorial review by a modern radiologist.

The author does not agree with the generally accepted concept that in many cases a highly probably diagnosis can be reached by adequate consideration of the clinical, laboratory and radiologic findings. He would *always* supplement such with biopsy, if necessary needle aspiration biopsy, despite the acknowledged limitation of same. Throughout the book he refers in many places to "overdiagnosis" by pathologists of benign bone lesions. This would suggest that the criteria for pathologic deduction are not quite as precise as he believes.

The terminology used for many lesions is original with the author or with him and Dr. H. L. Jaffe. Whether it is concurred in by a majority of pathologists is not known, but it is somewhat entertaining to read that he "abjures such confusing combination names as chondromyxosarcoma" but willingly endures such terms as "benign chondroblastoma of bone" (based on fifteen cases) and "chondromyxoid fibroma of bone" (based on twelve cases).

In subsequent editions one would like to suggest that the author complete the second paragraph on page 15. That is, he dislikes (as does your reviewer) the unprecise term "cyst," but he does not suggest an alternate. He does not indicate the *results* of therapeutic recommendations which he offers. (For example, the hemangio-endothelioma illustrated in figure 60.)

The roentgenographic illustrations in figures 3, 5, 21 and some others would bear remaking, with less contrast. The legend to figure 27 indicates that the author believes the roentgen findings are "characteristic" to a certain extent; this observation is based on only about twelve cases and is, I believe, too sweeping. Figure 71A should be remade, and 71B reversed.

The statement that approximately 15 per cent of cases of Paget's disease may develop sarcoma is in conflict with the experience of many; we would place the estimate closer to 1 per cent. Since Paget's disease is relatively common, this point should be reviewed.

In summary, we would wish that the author were more constantly influenced by part of his own legend to figure 18, a solitary enchondroma, which reads "From the roentgen picture alone, it is hardly possible to venture the correct diagnosis with any assurance" . . . His comments on the attitude of competent pathologists to the identity of reticulum cell sarcoma of bone, Ewing's tumor, and certain other entities indicates that a similar comment applies to the "histopathologic findings alone." In other words, this reviewer suggests that the correct diagnosis of bone tumors requires the alert cooperation of the attending physician, the radiologist and the pathologist, and that all should act as joint clinicians in this important work.

* * *

MEDICAL DISORDERS OF THE LOCOMOTOR SYSTEM—Including the Rheumatic Diseases—Second Edition. Ernest Fletcher, M.A., M.D. (Cantab.), M.R.C.P., Physician-in-Charge of the Department of Rheumatism and Lecturer on the Rheumatic Diseases, Royal Free Hospital. The Williams and Wilkins Company, Baltimore, 1952. 883 pages, $11.00.

This huge book presents a vast amount of information. Subjects considered in detail run the gamut from rheumatoid and osteoarthritis to peripheral vascular disorders and the psychiatric aspects of disturbances of the locomotor system. Physiological and anatomical information pertinent to the subject is included. The author's point of view in regard to the pathogenesis of the common nonsuppurative arthritides is not in full accord with most current thought and is obscurely stated. Too much attention is devoted to focal infection.

Almost every agent and technique ever used in the treatment of rheumatoid arthritis is described, often uncritically. Nowhere is there a satisfactory summary of procedure emphasizing the few useful tools. The consideration of adrenocortical hormone therapy is completely inadequate, reflecting the author's limited experience with these agents.

Many specific criticisms might be made of this book. The most serious to this reviewer are that too much material is included, the organization is confusing, and the presentation is diffuse. It would be improbable that a practitioner could, with this book as a guide, plan a satisfactory investigation of, and therapeutic program for, a patient with a disease of the locomotor system unless he had had very substantial prior experience with the problem. With such experience, he would probably have other sources available which he would wish to consult.

PEPTIC ULCER—Clinical Aspects, Diagnosis, Management. Editor, David J. Sandweiss, M.D., Associate Attending Physician, Division of Internal Medicine, Harper Hospital, Detroit, Mich. W. B. Saunders Company, Philadelphia, 1951. 790 pages, 164 figures. $15.00.

This book has been assembled by a board of editors representing the American Gastroenterological Association. Seventy-seven specialists have contributed to produce a comprehensive and yet comparatively concise handbook on peptic ulcer.

Some 64 chapters make up the eight main sections which include: (1) Anatomy and Physiology of the Upper Gastrointestinal Tract. (2) Pathogenesis and Etiology of Peptic Ulcer. (3) Diagnosis and Differential Diagnosis of Uncomplicated Gastroduodenal Ulcer. (4) Medical Treatment of Uncomplicated Gastroduodenal Ulcer. (5) Surgical Treatment of Gastroduodenal Ulcer. (6) Peptic Ulcer of the Young and Aged. (7) Peptic Ulcer Other than Gastroduodenal Ulcer. (8) Complications of Gastroduodenal Ulcer.

Although all phases of peptic ulcer are considered the greatest emphasis is given the clinical aspect, with particular accent on treatment. Various facets of this problem are discussed in detail and with due care.

The foreword states that the Governing Board of the American Gastroentological Association "thought that a crystallization of current ideas on diagnosis and management was greatly needed by the medical profession—gastroenterologists and surgeons, as well as roentgenologists, internists and general practitioners . . . (and) should serve a highly useful purpose."

The reviewer agrees. The editor and his staff have succeeded admirably in their efforts. And students of peptic ulcer for years to come may well consider this volume a landmark for orientation about the disease as well as an excellent reference.

* * *

TEXTBOOK OF MEDICINE, A. Edited by E. Noble Chamberlain, M.D., M.Sc., F.R.C.P., Senior Lecturer in Medicine, University of Liverpool. 266 illustrations. The Williams and Wilkins Company, Baltimore, 1951. 962 pages. $10.00.

The advent of a new one-volume textbook of medicine to the already well-stocked shelves of the library calls for an explanation of its need and purpose. The editor writes: "The contributors to this book are disturbed by the increasing factual knowledge which is expected of the medical student in his final examinations. The student is not commonly in a position to judge of the relative importance of the various facets of this knowledge, and the writers have endeavored to make some selection for him."

The results of their labors have produced a volume refreshingly modest in size and interestingly written. Brevity, unfortunately, is too often pursued to its limit, which results in uninformative generalities and, at times, inaccuracy in even some of the commoner diseases. The illustrations are uniformly excellent and well used.

As is the case with a number of other current English texts, the local reader will be surprised at the frequency with which sulfathiazole is recommended as the treatment of choice in various infections; and at the preference for the arsenic-bismuth-iodine treatment of syphilis.

The reviewer fears that the American medical public will get too little from this book: It contains insufficient information and discussion for the practitioner to employ it as a reference. It may be of possible use to an instructor giving an elementary course (especially because of the use of the illustrations). But our third and fourth year students and interns would be made most unhappy if they had to fall back on such a volume for their textbook of medicine.

SURGICAL GYNECOLOGY—Including Important Obstetric Operations. J. P. Greenhill, M.D., Professor of Gynecology, Cook County Graduate School of Medicine. The Year Book Publishers, Inc., 1952. 350 pages. $8.50.

Greenhill says in the introduction to his book that it was prepared for young gynecologists, general surgeons and general practitioners who perform operations and that he has tried to show, in as simple a way as possible, how to carry out "nearly all" the gynecologic operations which are being done today. Evidently, this is wishful thinking and the direct antithesis to sound training principles. Yet further on he says that regardless of how skilful a man's surgical technique might be, this does not qualify him as a gynecologic surgeon. One may wonder, therefore, why Greenhill ever undertook to bring out a book which has little more merit than being an oversimplified picture book of equally oversimplified surgical procedures. He calls it a handbook but he fails to discuss what by most surgeons is considered the principal guide to performing operations and that is the reason for performing them. Some sixty pages are devoted to pre- and postoperative care. This, in substance, again is an oversimplification of the standard procedures to be found in any good textbook on general surgery. The illustrated portion of the book presents gynecologic and allied operative procedures again in an oversimple manner in the form of line drawings, including a number of obsolete procedures, albeit the drawings in general will appear clear to the experienced surgeon or gynecologist. Your reviewer credits the author with good intentions but he is not so certain that the result merits praise. It certainly is not a guide to be used by the inexperienced in the hope that one look at these oversimplified line drawings is sufficient to entitle him to undertake what may prove a difficult and complicated surgical operation. The experienced operator hardly will want to spend eight and a half dollars on a book which in no way can measure up to sound surgical texts which cost little more.

* * *

FOUNDATIONS OF NEUROPSYCHIATRY—Fifth Edition. Stanley Cobb, A.B., M.D., Bullard Professor of Neuropathology, Harvard Medical School. The Williams and Wilkins Company, Baltimore, 1952. 287 pages, $3.00.

This is the fifth revised and enlarged edition of what was first known as "A Preface to Nervous Disease." The present volume as compared with the fourth edition, written in 1948, is much larger. Starting with Chapter 1, which is entirely new, the author tell us that every chapter, with the exception of Chapter 8 on "Cerebral Spinal Fluid," has had considerable revision or has been completely rewritten.

Although in general the term "neuropsychiatry" is being done away with, Cobb still clings to it and insists that the brain is the organ of mind, that psychology is the study of the mind, and psychiatry the study of the abnormal mind. He feels that a knowledge of neurology and neuropathology is basic to a study of psychiatry.

Most of the material in the book is neuroanatomy and neurophysiology. There are two chapters on neuropathology, one on epilepsy, and the two last, Chapters 13 and 14, are "Psychological Concepts in Medicine" and "Psychopathological Reactions." It will thus be seen that the book is principally devoted to what the author calls "the simpler workings of the Central Nervous System," and he adds "In truth, little more than these simple mechanisms is thoroughly understood and even some of these are still controversial."

The book accomplishes the author's purpose of stating some of this basic neurological material in a simple, lucid and correct manner. It can be recommended without reservation for the purpose for which it is designed.

EAR, NOSE AND THROAT DISEASES FOR THE GENERAL PRACTITIONER. William McKenzie, M.B., B. Chir. (Cantab.), F.R.C.S. (Eng.), Surgeon, Royal National Throat, Nose and Ear Hospital. E. and S. Livingston, Ltd. (Distributed through Williams and Wilkins Co., Baltimore), 1952. 136 pages, $2.00.

This small volume was obviously written for the English physician and most of us in the United States will find it disappointing. The author planned to make the descriptions in the book dependent on the use of the tongue blade only. Discussions are sketchy and incomplete. The recommendations for treatment seem to lack therapeutic aggressiveness. For example he recommends a week in bed as *the* treatment for tonsillitis, stating that the disease is self-limited. One of the best sections of the book is that on indications for tonsillectomy in childhood; it is excellent. There are many practical suggestions tucked away here and there, but they are too widely separated to justify recommending this book for the physician's reading. The sections on diseases of the ear, nose, and throat in the current textbooks of minor surgery or the "Specialties in General Practice" are much superior in their treatment of this field. This book cannot be recommended.

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DEVELOPMENTAL DISORDERS OF MENTATION AND CEREBRAL PALSIES. Clemens A. Benda, M.D., Director of Research and Clinical Psychiatry, Walter E. Fernald State School, Waverley, Mass.; Instructor in Neuropathology, Harvard Medical School. Grune & Stratton, New York, 1952. 565 pages, 103 illustrations, $12.75.

This is a very important book, more so even for the pediatrician than for the neurologist and psychiatrist. The author, well grounded both in organic neurology and in psychiatry, is well equipped to bring together in one volume a very complete consideration of all of the disorders of development and accidents of birth. The book is divided into five parts: Antenatal developmental disorders, cerebral palsies, metabolic disorders and degenerative diseases, total personality disorders, and principles of treatment. The illustrations are well chosen to illuminate the text, which is clear and concise. It is the author's plea that more attention be paid to these disorders, with a resulting more intelligent handling of the children that he prefers to term "exceptional." His breadth of viewpoint is refreshing, and a perusal of his book will benefit not only the specialists who treat such patients, but the general physician, who is the first called upon by the parents for counsel and guidance.

* * *

CARDIAC EMERGENCIES AND HEART FAILURE. Arthur M. Master, M.D., Cardiologist, Mount Sinai Hospital, New York; Marvin Moser, M.D., 1st Lt. USAF (MC), Walter Reed Army Hospital, Washington, D. C.; and Harry L. Jaffe, M.D., Adjunct Physician, Cardiology, Mount Sinai Hospital, New York. Lea & Febiger, Philadelphia, Pa., 1952. 159 pages, 13 illustrations, $3.00.

This small book fulfills the need of a concise assembly of the measures used in treating cardiovascular emergencies and congestive heart failure and should occupy a place in the practicing physician's handbag.

The tabulation of drugs that should be available in that handbag is a unique and valuable introduction to the text. Short diagnostic sections and physiologic discussions are incorporated in some chapters and the frequent brief case histories illustrate effectively the management of specific problems. The treatment of cardiac arrhythmias and congestive heart failure is well presented and exceptionally thorough. Such accepted current drugs and procedures as pronestyl and positive pressure oxygen masks are carefully appraised as to indication and application.

The authors' opinions in the differentiation of myocardial infarctions arising from coronary insufficiency and from coronary occlusion hardly warrant the space devoted since therapy differs little.

The discussion of the treatment of the acute hypertensive crises is not as complete as the reviewer would desire as it fails to include comment on some drugs such as hexamethonium or intravenous veratrum alkaloids, nor is venesection mentioned in this chapter.

The opinions of certain physicians may occasionally disagree with those of the authors such as in the treatment of shock in myocardial infarction or the technique of applying anticoagulant drugs, but the safest and most effective methods of therapy have been presented in almost all instances.

The book is well written and indexed and contains a remarkable amount of practical information ingeniously compressed.

* * *

THE AURICULAR ARRHYTHMIAS. Myron Prinzmetal, M.D., Eliot Corday, M.D., Isidor C. Brill, M.D., Robert W. Oblath, M.D., and H. E. Kruger. Charles C. Thomas, Publisher, Springfield, Ill., 1952. 387 pages, $16.50.

This excellent monograph presents in detail the authors' experimental and clinical investigation of the auricular ectopic rhythms. Their methods of investigation which utilize the electrocardiograph, the cathode oscillograph, and high speed cinematography of the beating auricles have produced crucial information which was not previously available.

Convincing evidence of the origin and spread of the impulse in auricular tachycardia, flutter and fibrillation is presented and documented by remarkably clear illustrative material. The circus movement theory of auricular flutter and fibrillation is clearly disproven to the authors' and reviewer's satisfaction, and flutter is demonstrated to be a variant of auricular tachycardia. The chapter on pharmacology and treatment are excellent and incorporate the authors' views of the mode of action of digitalis and quinidine in the arrhythmias.

The format, print and paper are of unusual excellence and the illustrations show remarkable effort of both authors and publisher for clarity of reproduction.

This book can be highly recommended for medical students and practitioners who are interested in heart disease. It will be an essential addition to the libraries of cardiologists, physiologists and electrocardiographic laboratories.

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VIRUS AND RICKETTSIAL DISEASES. S. P. Bedson, M.D., F.R.C.P., F.R.S., Professor of Bacteriology, London Hospital; A. W. Downie, D.Sc., M.D., Professor of Biology, University of Liverpool; F. O. MacCallum, B.Sc., M.D., Director Virus Laboratory, Central Public Health Laboratory; C. H. Stuart-Harris, M.D., F.R.C.P., Professor of Medicine, University of Sheffield. The Williams and Wilkins Company, Baltimore, 1950. 383 pages. $5.50.

The viruses have received increasing attention from textbook writers in the last five years. The excellent book edited by Rivers, and the monumental "Virus Diseases of Man" by van Rooyen and Rhodes, have filled a much needed space on the shelves of specialists and investigators. Now a group of English authors headed by S. P. Bedson have written a most suitable text for medical students and physicians in general. Brief but complete, readable and accurate, it supplies just the sort of information and interpretations which are required in the day to day consideration of the clinical problems of virus infection in man.

Ample bibliographies, critically selected, are supplied. This book is highly recommended. It should be required reading for every student. Practitioners will be well rewarded for the few hours required to read it.

ADVANCES IN PEDIATRICS — Vol. 5. Editor, S. Z. Levine, Cornell University Medical College. The Year Book Publishers, Inc., Chicago, Ill., 1952. 273 pages, $7.00.

Volume 5 is the first issue under this title in two years. This book comprises six monographs, all supported by very extensive bibliographies. The title of the book indicates the scope of the bibliographies.

I. "Advances in the Treatment of Bacterial Meningitis" by Hattie E. Alexander of Columbia University emphasizes the long known principle of optimal treatment rather than minimal, in which section the author explains the development of resistance of the various organisms to the several antibiotics and chemotherapeutic agents. The modes of action of the available agents are outlined. With proper use of the available agents in sufficient dosage there is decidedly less need for intrathecal treatment. The author outlines a very definite mode of treatment for each type of pyogenic meningitis. This section alone makes the volume very valuable for the practitioner.

II. "The Nephrotic Syndrome in Children," by Henry L. Barnett, Carolyn W. Forman and Henry D. Lauson, New York Hospital-Cornell Medical Center. This monograph amasses much experimental data and clinical observation to explain the definition, etiology, pathology and physiology of the syndrome. There is a section devoted to "Experimental Nephrotic Syndrome." The authors feel the nephrotic syndrome is initially a disease of the kidneys, specifically of the glomeruli. A large section is given over to laboratory diagnosis and treatment, where the use of ACTH and cortisone is fully explored. Case histories and charts are prominently displayed.

III. "The Relations of Vitamin K Deficiency to Hemorrhagic Disease of the Newborn," by H. Dam, H. Dyggve, Hjalmar Larsen and P. Plum of Copenhagen, Denmark. The authors show the relationship of vitamin K to the coagulation of blood. The physiology of the prothrombin variations during infancy is outlined. It is the opinion of the authors that hemorrhage of the newborn due to hypoprothrombinemia can be prevented by the administration of vitamin K, either to the mother and the child or to both. Charts and tables are numerous.

IV. "Iron Metabolism in Infants and Children," by Carl H. Smith, Irving Schulman and John E. Morgenthau, New York-Cornell Medical Center. Largely through the use of isotopes many studies have been made dealing with absorption, transport and storage of iron in various physiological and pathological states. The authors define "serum iron," "latent iron combining capacity," "total iron binding capacity" and "percentage saturation." The presence in human plasma of a metal-combining component is established and that serum is transported only when bound to this specific protein. The distribution of the various phases of the iron in the body, together with the absorption, transportation, utilization, storage and excretion is established. Iron metabolism in the newborn is discussed as well as transplacental transfer. Normal values of the various phases of iron metabolism for infants and children are stated. Iron deficiency is not necessarily associated with hemoglobin percentage. Infection and hemolytic disorders are discussed.

V. "Angiocardiographic Studies in Children," by John Lind and Carl Wegelius of Stockholm, Sweden. This is a detailed listing of the technique and apparatus for studying the chambers and the dynamics of the heart without catheterization, by contrast medium, using roentgenography simultaneously in two planes, with electrocardiographic correlation. There are 22 pages of x-rays, clearly printed, showing the results of this technique.

VI. "BCG Vaccination," by Arvid Wallgren, Stockholm, Sweden. This monograph has contributed very little that is new. It is another discussion of this method to control tuberculosis. The types of antituberculosis vaccines are discussed. The treatise is limited primarily to the BCG vaccine, its preparation, methods of administration, complications and untoward effects, the duration of immunity, and criteria for vaccination. The efficiency of such procedure is limited largely to the use of this vaccine in Sweden. A plea for its use as a public health measure is made under certain conditions geographically existing.

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AN ATLAS OF GENERAL AFFECTIONS OF THE SKELETON. Sir Thomas Fairbank, D.S.O., O.B.E., M.S., Hon. M.Ch. (Orth.), F.R.C.S., Consulting Orthopedic Surgeon and Emeritus Lecturer in Orthopedic Surgery, King's College Hospital. The Williams and Wilkins Company, Baltimore, 1951. 411 pages, $10.00.

This volume presents to the interested physician the gleanings of a long and unusually broad experience with disorders of bone. Few physicians will be familiar with all the conditions touched upon in this book; all will be grateful for the opportunity to acquaint themselves with a concise description of an unusual condition when confronted by it. Ordinary conditions are dismissed rather briefly; the rare or unusual are given more space. The text places emphasis upon clinical and radiological features. Pertinent aspects of pathology are discussed, but the physiology, biochemistry, and therapy of skeletal disorders are not considered in this volume. An introduction includes tabular presentations of the levels of calcium, phosphorus, and alkaline phosphatase found in the blood in various conditions, a simplified classification of the types of dwarfism, an enumeration of conditions characterized by increased radiopacity of bone, and a list of the causes of collapse or fracture of bones.

The terminology used to describe the various demineralizing diseases of bone will not be acceptable to all pathologists or endocrinologists; thus, the precise term "osteoporosis" is used loosely to describe the roentgen appearance of the bone in hyperparathyroid bone disease. Some of the x-ray films used as illustrations are either very old or are poorly reproduced. Since the book covers so wide a range of disorders, some probably seen and photographed many years ago, it cannot be expected to demonstrate all conditions with films taken with modern technique.

This book is a "must" for any physician, orthopedist, pediatrician, or roentgenologist who wishes to become an authority on skeletal disorders. It will not supplant more general texts, but will admirably supplement them.

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A SYNOPSIS OF OPHTHALMOLOGY. J. L. C. Martin-Doyle, M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.O. (Oxon.), Surgeon, Worcester City and County Eye Hospital; Consultant Ophthalmologist to the Ministry of Pensions and Ministry of National Insurance. The Williams and Wilkins Company, Baltimore, 1951. 238 pages, $4.50.

The title describes the book and the preface states it is designed for medical students, graduate students and busy general practitioners. There are 26 chapters and 238 pages. In this pocket-size edition a large amount of material has been condensed. The approach has the English concepts on ophthalmology and is a very useful book for quick reference.

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The Meaning of Disease

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• *A wider concept of disease is developing, which deals with the social environment, not only with the physical, chemical or ecological factors, as they affect the homeostasis of the internal environment of the organism. In such a concept it is the fitness of the whole personality which determines ease or dis-ease in adaptation. If the medical profession is to retain the strategic direction as well as the tactical command of the battle for health, it must widen the bases of its educational program so that every physician will understand and conform to the plan of battle even though his individual role is highly restricted; so that even in the office of a technical specialist the whole personality of the patient in relation to his whole environment is dealt with.*

About 25 years ago there appeared a remarkable and rather epoch-making book by William Alanson White under the title of *The Meaning of Disease,*[2] in which he developed the then rather revolutionary concept that disease was a manifestation of man's struggle to adapt to his environment. Until then medical thought about disease had been preoccupied with the pathological processes affecting the structure and functions of organs rather than with the struggle taking place between the owner of those organs and the total environmental situation in which he exists.

In the *Bible,* of course, were many references to the relationship between the perturbations of the soul and those of the body, but, in the main, religion kept the concepts of the two in quite separate compartments. Burton in his *Anatomy of Melancholy* attempted to deal with this relationship on a philosophical basis. Claude Bernard had taught that the organic functions of the body served to keep its internal environment within a relatively constant range of conditions. It remained for Cannon to show experimentally that these physiological mechanisms were profoundly affected under the stress of emotional reactions. Thus psychosomatic medicine was born legitimately of Psyche and Soma, and christened at the font of science. It was White who made us see that these psychosomatic disorders did not occur piecemeal, organ by organ, but that all illness or disease must be conceived as the struggle of the *whole* personality against the stresses of the *whole* environment.

This idea has today achieved the widest acceptance, as one may see in reading the symposium on "Adaptation" edited by John Romano,[1] in which a general biologist, a social anthropologist, a psychologist, a physiologist, and a psychiatrist met on common ground. In spite of this agreement in the upper echelons of Olympus, the rank and file of mortal practitioners are still committed to the old concepts

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Address of Guest Speaker, presented before First General Meeting at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

From the Department of Medicine, University of Rochester, and the Medical Clinic of the Strong Memorial and Rochester Municipal Hospitals.

of diseases of the parts of man and with parts of the environment rather than with the struggle of the whole man with his whole environment. Thus it seems pertinent to discuss the *meaning* which disease must have to each physician both as an individual and as a member of a great profession. If we grasp this meaning, if we accept the wholeness of things pertaining to disease, how can we continue to categorize diseases according to the deficiencies of organic responses? Can we persist in the narrow sort of specialization in practice which has been engendered by the older concepts? Can we go on treating only the eye, the ear, the heart, the lung, the stomach, bowel, or prostate of a patient without consideration of the whole man and the setting in which he exists? Are we, like Joseph's brothers, so busy dividing up Joseph's coat of many colors that we forget what becomes of Joseph?

"Well," you will say, "the capacities of even the greatest doctors are finite, while the problems of medicine are infinite. Let each man play the part for which he is best fitted—if worse comes to worst, we have *groups*. At any rate that is what is happening, so make the best of it."

What about *group practice,* is it to be a congeries of technical experts who pass a patient down a disassembly line and back up an assembly line? Is there anyone to comfort the sick man and hold his hand, and be guide, philosopher and friend, while he goes through this process? What about the *group brain* and the *group conscience?* Is the group going to confine itself only to patching up the man's body or is it going to help him to achieve a better total adjustment to his environment, or to seek a new one for which he is better fitted to adapt? These are pertinent questions to which the answers are being hammered out every day on the anvil of trial and error.

Let it not be assumed, from the questions I have asked, that I am against groups in medicine. Nothing becomes more apparent, as our understanding of disease progresses, than that the care of the sick is becoming a team operation, the success of which depends on a captain, imbued with the highest ideals of sportsmanship, with a good eye to strategy as well as to the tactical formations which respond to the signals which he calls. He and his whole team must have the broad concept of the nature of disease, and realize that each patient is struggling with his entire social and ecological environment and not simply with trauma, infection, intoxication, organic defect, or other immediate cause of an episode of illness. At best the medical group operating a clinic represents a team dealing with the immediate problems of illness, chiefly those of diagnosis and therapeutics.

A good group will take such immediate measures as may be available to *prevent* recurrence or extension of an illness. It may employ the ancillary services of visiting nurses and social workers to meet environmental problems of the home and family, and to effect liaison with public agencies which are a part of the forces of preventive medicine.

A good group may also organize facilities to aid in rehabilitation, although the requirements for the conduct of this "third phase" of medicine will be far beyond the capacities of most groups, just as are those of preventive medicine.

If one estimates the situation confronting medicine in the Battle for Health, one can readily see that three types of teams are required: one for *diagnosis* and *therapeutics,* one for *prevention,* and one *for rehabilitation.*

Our traditional concepts of the functions of these forces are quite inadequate in the light of what we may presently conceive to be the nature of disease. We have a better understanding of the requirements of a diagnostic-therapeutic group than of the table of organization for the preventive or rehabilitative forces. We have much to learn about how to interrelate them and coordinate their tactical activities, and the grand strategic plan has yet to be drawn.

In the field of preventive medicine, it is obvious that great strides have been made in reducing the bill of mortality by the efforts of our public health agencies directed against the immediate microbiological causes of disease. It cannot be said, however, that we have yet achieved much in the reduction of total morbidity. In fact the reduction in the death rate in the earlier years of life has probably even increased the amount of chronic illness, for more have been spared to be its subjects. The forces of prevention are being directed with great energy against the immediate or proximate causes of morbidity in industry and in senescence, and against cancer and infection. In the social sciences and in psychology the primitive concepts of social pathology and psychopathology are forming. The psychiatry to which we must look for guidance in this phase of the battle is rapidly approaching the point where it may be able to assume the leadership which medicine must give in the fields of child training, education, both secular and religious, and in the fields of law and public administration.

What is the kernel of the problem that confronts us? Is it not that the growth of science and technologic development have enormously extended the scope of environmental stresses to which man must adapt? This expansion in scope has been so rapid that the older mechanisms which society has employed for bringing up a majority of its members from the infantile state of primitive little beasts to full stature as mature adult men and women, have proved inadequate, in the sense that only a small proportion achieve maturity and a larger proportion remain immature. Within the short space of 300 years we have gone from societies in which a majority of citizens might live out their span of years within the confines of a single county to one which is truly global in extent, owing to developments in communication and transportation. In smaller and more circumscribed societies when the rate of change was not too great, a semi-static equilibrium tended to develop. There was some sort of harmony attained by religious and secular education which developed a sufficient body of mature adults to manage community affairs successfully. In our greatly expanded society we need a mature psychiatry to guide us in child training, in improving the methods of bringing children to the maturity demanded by our global situation. Our mores and our laws, our ethical goals must be set to a realistic conception of our situation and more people must be brought to mature adaptation to it. This is the final task of preventive medicine.

The concepts of rehabilitation have developed from our better understanding of the meaning of disease. In the normal development of the mature person there is an orderly *progression* through stages of infantilism, childhood, early and late adolescence to adulthood. We recognize that *regression* takes place in illness, by which we mean that the personality reverts toward earlier levels of maturity when one is ill. For instance, the man who is so ill that he must be fed and bathed and have a bed pan and urinal brought to him, returns in a sense to an infantile level, from which he must again progress as convalescence takes place. It is the function of rehabilitation to promote this reprogression. There is far more to this than the restoration of function to an injured part, more than the fitting of prosthetic appliances. All the resources for psychological rehabilitation must be employed as well as those of physical medicine.

The processes which make for successful convalescence offer medicine an unrivalled opportunity to carry the process beyond the level preceding illness. One could mention innumerable instances in which the conquest of severe disability has carried an individual to new heights of maturity and achievement, far beyond those which were in evidence before illness or disability occurred.

For guidance in this "third phase" of medicine we must expect leadership from psychiatry. This field of medical endeavor is rapidly emerging from the state in which it was regarded as a specialty, devoted to the treatment of psychoses. Psychiatry is no longer immured within the walls of madhouses; it is taking its place in the wards of general hospitals, and in health departments. In these roles it is developing and extending its scope so that it is no longer a specialty devoted to the care of the insane and to the lesser forms of neurotic illness. Psychiatry will become one of the most basic parts of the training of the general practitioner and the internist, who is, after all, a general practitioner with a big reputation.

In the medical school in which I serve, our department of psychiatry has teachers assigned to each of our other major clinical services. It is the function of those teachers to study, analyze and interpret the psychological phenomena attending all types of illness. The clinical clerk who is assigned to a patient with peptic ulcer will be able to synthesize the lessons learned with the psychiatrist as well as with the gastroenterologist and the surgeon. These latter gentlemen are also being instructed and all of us are functioning better as a team because of this leaven in our daily bread. It is a common experience for me on my ward rounds to have a student tell me that a certain patient with hypertension is unable to express anger overtly, or that Mrs. Jones, who has ulcerative colitis and was doing well, has relapsed because the doctor on whom she was dependent has left town for a vacation; or that Mrs. Brown, who last week was in status asthmaticus, has remarkably recovered on the news of the death of her husband.

We oldsters have learned the truth of many of these things the hard way, and slowly, over many years of experience. These youngsters on completion of their training will approach their various tasks with a breadth of view and with a perspective that was denied us in our own school days. We can look forward then to a time when we will possess a corps of physicians who can assume strategic direction as well as tactical command of the three great phases of the battle for health, so that each will understand and conform to the plan of battle, which deals with the whole personality of the patient in relation to his whole environmental situation, even though the individual physician's role in the team is highly specialized.

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The Clinical Picture of Pancreatic Insufficiency

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• *Minor degrees of pancreatic insufficiency may go unrecognized. There is a paucity of symptoms and physical findings in mild and moderate degrees of insufficiency and in such circumstances laboratory methods are necessary to determine the presence of insufficiency. The clinical picture when insufficiency is well established may be characterized by loss in weight; vague indigestion; voluminous, light-colored, glistening stools in which fat globulets may be seen; changes in the concentration of pancreatic enzymes in the blood indicative of lowered pancreatic function; diminished amounts of pancreatic enzymes in the duodenal juice, and the related poor digestion of fat and protein in the food. Lowered tolerance of carbohydrate, as found in diabetes mellitus, may or may not be present. The location and character of the disease in the pancreas causing the insufficiency may or may not be apparent.*

THERE ARE TWO KNOWN FUNCTIONS of the pancreas, that of internal secretion of insulin, having to do with the metabolism of carbohydrate, and that of external secretion of enzymes, important in the process of digestion. The insufficiency of insulin results in the classic disease of diabetes mellitus. The insufficiency of the external secretion may be more obscure in its clinical manifestations. Pancreatic insufficiency, with or without disturbance in carbohydrate metabolism, may be related to any of the diseases of the pancreas which cause destruction or impairment of function of the acinous glandular tissue, such as chronic pancreatitis, tumor, hemorrhage, or stones.

Pancreatic insufficiency, theoretically, may arise to some degree in other conditions in which the nervous and/or humoral mechanisms of pancreatic secretion are disturbed, but probably so-called functional pancreatic insufficiency is of little or no clinical significance, since it would be expected to be so mild, transient and masked by other symptoms as to be difficult of recognition.

The external secretion of the pancreas contains three important enzymes: amylase, which acts on starch; lipase, which splits fats; and trypsinogen, which, after activation to trypsin, acts on proteins. Insufficient amounts of these enzymes reaching the intestinal tract produce the clinical features of the inadequate digestion of these three elementary food materials. Minor degrees of insfficiency go unrecognized. The digestion of fat and protein is not greatly impaired until there is a pronounced decrease, probably up to 75 per cent, in the lipase and trypsinogen below normal; and an even greater diminution of amylase is necessary before carbohydrate digestion is measurably impaired. The appearance of gross evidence of the indigestion of these food elements, of which fat indigestion is the most easily recognized, varies with the nature of the disease causing the insufficiency. In chronic pancreatitis the disease process, except for the acute episodes, is slowly progressive, and the changes resulting from the indigestion may not appear clinically for weeks, months or years after the onset of the disease. Evidences of indigestion are immediate if complete obstruction of the pancreatic duct occurs. Partial obstruction of the pancreatic duct may interfere with the egress of the pancreatic juice only enough to make indigestion slower or intermittent in appearance.

Minor degrees of pancreatic insufficiency may remain obscure or go unrecognized in chronic alcoholism, Laennec's cirrhosis of the liver, and gallbladder disease.

Diseases which may have an associated pancreatic insufficiency are acute pancreatitis, carcinoma of the pancreas, carcinoma of the ampulla of Vater, stone in the ampulla or major ducts, and benign ulcer of the duodenum involving the ampulla.

Diseases in which pancreatic insufficiency most often occurs are cystic fibrosis of the pancreas and chronic relapsing pancreatitis. In chronic relapsing pancreatitis, the pancreatic insufficiency is usually a late manifestation.

SYMPTOMS OF PANCREATIC INSUFFICIENCY

The intent and purpose of this paper is primarily concerned with the insufficiency of the external secretion of the pancreas; therefore, pancreatic diabetes mellitus, a form of pancreatic insufficiency of

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the internal secretion, insulin, will not be included, except as it may be related secondarily to severe and extensive destructive pancreatic disease.

The symptoms of pancreatic insufficiency *per se* are those of indigestion and malnutrition owing to the lack of proper digestive enzymes and inadequate utilization of food materials. As was pointed out before, these inadequacies in slowly progressive disease may be so minor, or so long in reaching clinical proportions, as to remain unrecognized until the disease causing the insufficiency is well advanced. For these reasons the milder degrees of pancreatic insufficiency may be without symptoms, and then accompanied by vague and indefinite symptoms of indigestion long before the gross evidences of the nature of the insufficiency appear.

Acute pancreatic insufficiency accompanies complete, or nearly complete, obstruction of the pancreatic duct, such as may occur with impaction by stone, or compression by tumor or edematous inflammatory condition. The symptom of pain or painful discomfort owing to the obstruction so greatly overshadows the clinical evidences of the insufficiency of enzymes that the clinical features of insufficiency are unimportant except in the follow-up observations, treatment and prognosis.

The symptoms in chronic pancreatic insufficiency may be classified as general, digestive, nutritional, and metabolic.

The general symptoms appear only in the more profound and prolonged instances, and are manifest by weakness, fatigue, and gradual debilitation, probably related to the nutritional deficiency.

The digestive symptoms vary in degree and character, but include sense of abdominal fullness, especially in the upper abdomen, flatulence, anorexia, nausea and minor abdominal cramping or discomfort. Vomiting may occur. The tendency is toward constipation. Diarrhea or loose stools appear some time in the course of the symptoms, usually when steatorrhea and creatorrhea are well advanced. When the insufficiency is severe the stools are voluminous, fatty or greasy, rancid, and malodorous, characteristic of the indigestion of fat.

The nutritional and metabolic symptoms are related to the severity and duration of the insufficiency, and they vary from being unrecognizable to the profound symptoms of weight loss, liver functional impairment, hypoproteinemia, hypocalcemia, vitamin deficiency, and the vague painful discomforts which may be associated with osteoporosis. The inability to utilize fat and protein in particular accounts for the weight loss, weakness, and wasting. In the more severe instances there may be associated fatty change in the liver with impaired hepatic functions. Severe hypoproteinemia will be accompanied by the clinical features of this condition. Multiple vitamin deficiencies occur, and in particular the symptoms and physical findings of the deficiencies of vitamins A, B, D and K may be present, which will account for dryness of the skin, hyperkeratosis, glossitis, cheilosis, edema and neuritis, osteoporosis, and bleeding in the mucous membranes and skin.

If the disease of the pancreas has been severe and extensive enough to involve enough islet cells, diabetes mellitus may be a part of the picture of pancreatic insufficiency.

Pancreatic insufficiency, in itself, probably does not cause pain, and extensive and long standing pancreatic disease may not have associated pain. The most severe and characteristic pain of pancreatic disease is associated with obstruction of the pancreatic duct, or edema or hemorrhage into pancreatic tissue. However, the diseases of the pancreas which lead to pancreatic insufficiency are frequently enough the cause of pain that the discussion of symptoms would not be complete without some mention of the location and character of pancreatic pain. Indeed, the pain of pancreatic disease may lead to a diagnosis long before there is any clinical evidence of pancreatic insufficiency. In the diagnosis of chronic relapsing pancreatitis, one of the more common diseases with which pancreatic insufficiency may be associated, the most important symptom is the recurrent episodes of upper abdominal pain.[1, 2] This pain may be mild and last only a few hours, or it may be severe and prolonged. Usually it is located in the epigastrium or more generally in the upper abdomen. At times it may be more on the right side of the upper abdomen and extend through or around to the corresponding level in the back, which may simulate the pain of biliary colic. At other times it may be on the left side in the upper abdomen and extend to the corresponding level in the back, and this location is considered more characteristic. At still other times it may be described as band-like in the upper abdomen and back. It may shift in these different locations and, indeed, it may extend into or radiate into the anterior chest and shoulder regions. It tends to be gradual in onset and disappearance. The character of the pain may be steady or cramping, cutting, aching, boring, or burning. The recumbent position may aggravate the pain, so that the patient may prefer to sit up in a bent forward position.

The great variation in location and reference of pain probably is related to the extensiveness and location or distribution of the pathologic lesion in the pancreas. Bliss, Burch, Martin, and Zollinger[2] studied the localization of referred pancreatic pain induced by electric stimulation through electrodes placed in different parts of the human pancreas at the time of surgical operation for biliary disease.

They found that pain stimulus in the head of the pancreas localized in the epigastrium to the right of midline and was distributed from the sixth to the eleventh thoracic dermatome on the right; pain arising in the body of the pancreas localized in the mid-epigastrium and was distributed from the sixth to the eleventh thoracic dermatomes bilaterally; and pain from the tail of the pancreas localized in the left epigastrium and was distributed from the sixth thoracic to the first lumbar dermatomes on the left.

The high incidence of respiratory tract symptoms in children with chronic pancreatic insufficiency owing to fibrocystic disease of the pancreas should be mentioned. These symptoms are associated with bronchitis, bronchiectasis, or suppurative pulmonary disease. It has been thought that this vulnerability to respiratory infection is owing to nutritional deficiency; perhaps the keratomalacia of the bronchial mucosa associated with vitamin A deficiency is a factor in partial bronchial obstruction and concurrent infection. Andersen[1] reported upon 22 patients who, after early diagnosis, received dietary therapy. A special formula supplemented by vitamins and pancreatin was used and bronchial infection did not develop.

PHYSICAL EXAMINATION

Usually in milder and moderate degrees of pancreatic insufficiency no abnormalities are noted upon physical examination. When the insufficiency is severe and of long standing, the physical abnormalities are related to the secondary factors or complications of nutritional and vitamin deficiencies and metabolic disorders. Abdominal distention, with flatulence, is usual. The disease of the pancreas causing the insufficiency may be attended by abnormalities observable upon physical examination, such as general abdominal tenderness, especially in the upper abdomen, during and shortly after an acute episode of relapsing pancreatitis, or a palpable mass of tumor or cyst of the pancreas. It might be well to emphasize the importance of special effort to palpate the pancreas. Grott[5] described a method which may be helpful. With the patient in lateral position on his right side, the examiner stands in front of the patient and, with the left hand under the lower portion of the thorax, uses his right hand to press inward and downward until it reaches the left edge of the vertebral column. Then the procedure is repeated with the patient in the lateral position on his left side and the examiner using his left hand for palpatory maneuver. This permits the stomach and duodenum to be pushed forward and the examining hand can get more nearly over the space between the stomach and the vertebral column.

LABORATORY STUDIES

In general, laboratory tests of three types are employed in the study of pancreatic insufficiency; namely, (1) gross, microscopic and chemical examination of stools; (2) examination of duodenal juice obtained through duodenal intubation under fluoroscopic control; and (3) determination of response of lipase and amylase in the blood serum to provocative stimulation.

1. *The stool in pancreatic insufficiency*

Grossly the stool is bulky and light colored, and droplets of fat may be seen adherent to the fecal material, or may be seen floating if the feces is put in water. Microscopically, there is an increased amount of unhydrolysed fat, as demonstrated with Sudan 3 stain; and many undigested meat fibers with the transverse striations clearly visible in the muscle fibers. Chemically, there is pronounced increase in neutral fat and nitrogen. With the patient on a low fat diet, daily excretion of more than three grams of nitrogen suggests pancreatic insufficiency.

Determination of the fat-nitrogen content in the stool does not identify the causes of the steatorrhea or azotorrhea, but it is a measuring rod for the presence of either. Further studies will be necessary to evaluate the causes. Chemical studies of partition of fat may aid in distinction of idiopathic steatorrhea from pancreatic deficiency but the quantitation of pancreatic enzymes in the duodenum is more reliable.

2. *Examination of duodenal juice obtained by duodenal intubation under fluoroscopic control*

Even though this method is subject to all of the inaccuracies of any procedure of capturing the fluid contents in a hollow viscus by putting the end of a tube there under standardized circumstances, it provides the most reliable studies for directly defining or determining the degree of pancreatic insufficiency. The studies on the duodenal juice obtained include quantity, determination of bicarbonate content, and quantitation of pancreatic enzymes. Decrease in the enzymes is evidence of pancreatic insufficiency, and the disturbance in the normal range pattern of these several factors may aid in differential diagnosis as to cause. Frequently in chronic pancreatitis there is decreased concentration of enzymes, although early in the disease the volume may be normal. With progression of the disease, volume, bicarbonate content, and enzymes decrease.

3. *Response of lipase and amylase in the blood serum to provocative stimulation of the pancreas*

The agents used for stimulation are secretin, Urecholine,® neostigmine, or combinations of any of these with morphine. The experience with these tests in the department of gastroenterology of Hahnemann Medical College points to the following deductions:

(a) In general, if the pancreas is normal there is no response to secretin, Urecholine, or neostigmine alone, but a prompt increase in serum content of lipase and amylase after combination with morphine.

(b) In general, in the presence of obstructed pancreas, without extensive acinous atrophy, there is an increase of 50 per cent or more (above a base line) in amylase or lipase content after the use of secretin, Urecholine, or neostigmine.

(c) In general, if there is extensive acinous atrophy of the pancreas no increase in serum content of amylase or lipase occurs after the use of secretin, Urecholine, or neostigmine, or any of them in combination with morphine.

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Telephone Technique

How is the telephone answered in your office? Brusquely and loftily, or pleasantly and with implication that the patient is important?

Thought given to telephone answering will be immediately helpful in your own relationship with patients, and ultimately in shaping the public attitude toward medicine. For example:

1. *Initial response to ringing telephone:*

WRONG: "Doctor's office."
"Just a minute, please."
"Hello."

RIGHT: "Doctor Jones's office, Miss Briarly speaking."
"Garfield 0-0000" (if there are several physicians using the same number).
"Doctors Jones and Black; may I help you?"

2. *On making appointments:*

WRONG: "I can give you Thursday at two."
"Doctor can see you Monday morning."
"Wednesday afternoon is the doctor's day off."

RIGHT: "Could you make it on Thursday at two?"
"Monday morning would be a good time if that is convenient."
"Doctor Jones will not be able to see you on Wednesday afternoon; could you come in Thursday?"

Pancreatitis and Carcinoma of the Pancreas

Some Aspects of the Pathologic Physiology

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• *The physiological phenomena accompanying pancreatic disease in adults are related to the local and generalized reaction of the body to the blockage and/or leakage of the three enzymes—amylase, lipase and trypsin. The measurements of amylase and lipase in the serum are the most reliable criteria in the diagnosis of acute disease. Related changes may include hypocalcemia, hypopotassemia, hyperlipemia, hyperglycemia and decreased renal function.*

In chronic pancreatitis, there is less fluctuation in the amounts of the enzymes in the blood. The presence of diabetes mellitus, demonstration of calculi by x-ray, and examination of the stools for excess fat and meat fibers are more important diagnostic guides.

In cancer of the pancreas, function tests using secretin stimulation of the gland followed by an examination of the external secretion or determination of the serum amylase have been used with some success.

THE MORE COMMON pancreatic diseases in adults, such as acute pancreatitis, chronic pancreatitis and cancer, are of most importance. Each of them may cause certain physiologic disturbances which can be measured by laboratory tests and are useful in the diagnosis and treatment of the disease and in determining the prognosis.

The pancreas produces about two liters per day of alkaline juice with a pH as high as 8.5,[17] rich in the enzymes amylase, lipase, trypsin and chymotrypsin. It is the effect of the blockage or leakage of these enzymes plus, in some instances, the destruction of the islets that produces a chain of physiological events which result in a pattern of characteristic departures from normal as determined by laboratory tests.

ACUTE PANCREATITIS

In acute pancreatitis there is the greatest variety of changes capable of measurement.[8] The escape of enzymes from the pancreatic ducts causes damage to tissue, edema, hemorrhage and fat necrosis. This results in local phenomena such as pain, tenderness, nausea and vomiting, segmental ileus and even visible subcutaneous hemorrhage in the flanks. Generalized changes may follow, such as hyperamylasemia, hyperlipasemia, hypocalcemia, hemoglobinemia, serum potassium abnormalities, shock and the alarm reaction.[8] Disturbance of renal function and lower nephron nephrosis have been noted.[8, 23] More recently, changes in the clotting mechanism of the blood have been recorded.[13]

The role of each of the enzymes as it infiltrates the tissue is important. Amylase appears to be innocuous. It is simply absorbed by the blood and eliminated in the urine. The most reliable basis for the diagnosis of pancreatitis is the presence of amylase in the blood and urine. Rarely is the test misleading, if other causes of hyperamylasemia are kept in mind. The other causes include perforation of the stomach or intestine, intestinal obstruction and infarction. In any of those conditions the amylase of the intestinal content can be absorbed but the content of the enzyme in the blood is nearly always less than 500 units, and usually under 300, per 100 cc.[8] Other abdominal conditions occasionally associated with an increase in the amount of amylase in the blood include acute cholecystitis,[18] appendicitis, retroperitoneal tumor[19] and volvulus of the colon. Extra-abdominal disorders such as myocardial infarction, pulmonary disease[28] and dissecting aneurysm may be accompanied by a rise in amylase values in the blood and occasionally have to be considered in differential diagnosis. In renal insufficiency the amount of amylase may rise because it cannot be excreted in normal amounts in the urine. This is especially true in uremia. The status of renal function should always be assayed even in the presence of pancreatitis as it may confuse the picture.

In recent years, another cause of high serum amylase and even of mild pancreatitis has been noted.[3] Morphine and codeine may apparently cause a spasm of the sphincter of Oddi of sufficient degree and persistence that dilatation of ducts and absorption of amylase occur. Even mild pancreatitis has been described in a patient with morphine poison-

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ing. Further investigation may prove that some of the hitherto unexplained elevations in amylase content in the blood are owing to opiate therapy in such diseases as acute cholecystitis, dissecting aneurysm, myocardial infarction and pulmonary disease.

In mumps the salivary amylase is absorbed and the content in the blood may rise as high as it does in acute pancreatitis. As the nature of the disease is obvious, however, this causes no problem in diagnosis unless mumps pancreatitis is suspected. Then determination of the lipase and antithrombin content of the blood may be helpful.

It has been reported that in acute pancreatitis the rise of urinary diastase may lag as much as 24 hours behind the increase of amylase in the blood. Some data, including the author's, indicate this may be true; but in most patients the two are parallel in elevation and subsidence. If the diagnosis is in doubt, both the serum and urine should be tested repeatedly. Well controlled investigation by Dankner and Heifetz[6] indicated that if renal function is normal, the amylase is cleared promptly by the kidney. Dankner and Heifetz also observed that transient impairment of renal function is most likely to occur between 24 and 48 hours after the onset of the disease.

If the pancreas is completely destroyed the amylase values in the blood may be normal within the first 48 hours after onset. In such circumstances other tests may be used—determination of amylase content in peritoneal fluid removed by tap, and of the amount of calcium and antithrombin in the blood. Keith and co-workers[14] noted increased amounts of amylase in the peritoneal fluid for as long as three days after the serum value had returned to normal. They studied fifteen patients in this regard and in three cases no peritoneal fluid was obtained when a tap was made. In studying autopsy material, the author was surprised that the autopsy surgeon noted free fluid in the peritoneal cavity in only one-third of subjects with severe or fatal pancreatitis. The value of the peritoneal tap, when the diagnosis is in doubt, is further enhanced by examination of the fluid for bile pigment and acid content.

Lipase is responsible for fat necrosis, the characteristic gross finding in pancreatitis. It is absorbed and unusual amounts may be present in the blood for several days. According to Comfort and coworkers[4] it remains elevated even after the amylase content has returned to normal. The procedure for the determination of serum lipase is more difficult and time-consuming than that for amylase and therefore has not been so generally used.

The fatty acids formed when neutral fat is split by lipase combine with calcium to form soap. This in turn causes a drain on the serum calcium. In the author's experience, the serum calcium mirrors fairly well the quantity of fat necrosis. In severe damage it is below 8 mg. per 100 cc. of blood, and when below 7 mg. the outcome is usually fatal.[8] When depressed it may return to normal between the fourth and sixteenth day of the disease. Thus, determination of the calcium content of the blood may be helpful in the diagnosis in cases in which the patient is not observed until after the amylase content has returned to normal, or in cases in which there is complete destruction of the gland and amylase levels are normal or subnormal.

Perhaps the most interesting of all and the least understood is the action and fate of trypsin. The site of conversion of trypsinogen to trypsin is not known. But, when disseminated in the tissues, it is the apparent cause of hemorrhage[24] both by its direct necrotizing action on blood vessels and by its tendency to cause thrombosis of veins; thus adding to the anoxia of the tissues, furthering necrosis and obstructing the outflow of blood. Trypsin in proper concentration converts prothrombin to thrombin. This factor, added to the necrosis of vascular endothelium and consequent tendency to the deposition of platelets, would likely cause thrombosis. Partial to complete thrombosis of the pancreatic and splenic veins has been noted many times at necropsy.

Trypsin or trypsin plus lipase is also capable of causing hemolysis; thus hemoglobin may be released in the areas of hemorrhage and absorbed. Twice the author has noted a brown pigment in the serum of patients with severe pancreatic necrosis. One of them had severe oliguria, and lower nephron nephrosis was observed at necropsy.[8] Furthermore, in necropsy material the lesser omental cavity may be greatly distended with brown fluid while abundant gross evidence of hemosiderin is seen in the lining. There is reason, therefore, to believe that local hemolysis resulting in hemoglobinemia does occur in acute pancreatitis.

The fate of any trypsin absorbed by the blood is a problem all of its own. The plasma contains trypsin inhibitor,[25] a specific neutralizing substance which combines with trypsin. The author is now in the process of measuring both of these factors in patients with pancreatitis and various other diseases.

Innerfield and co-workers[13] produced hypertrypsinemia in dogs by the intravenous injection of the commercial trypsin. This caused a decrease in Ac-globulin, prothrombin and antithrombin for about five hours. Then Ac-globulin and prothrombin returned to normal, but the antithrombin rose to excessive levels for 15 to 17 hours. These investigators noted that in patients with acute pancreatitis the antithrombin remained high throughout the course of the acute illness. A similar rise in antithrombin did not occur in other acute abdominal conditions.

In a more recent report they stated that trypsin was present in the blood in each of the patients with pancreatitis.

The author has done the antithrombin tests* on a few patients. The content was normal in one with pancreatitis, increased in a patient with mesenteric thrombosis and also in one with metastatic carcinoma of the liver. It would seem that further experience with the antithrombin test is in order before it achieves the prominence given amylase in the diagnosis of acute pancreatitis.

Since 1846,[26] hyperlipemia with a milky serum has occasionally been noted in acute pancreatitis. This phenomenon is probably owing to more than one cause. Klatskin[15] observed that the course of idiopathic hyperlipemia may be complicated by attacks of acute pancreatitis, owing perhaps to clumped lipid particles in the vascular tree of the pancreas. Gardner[11] noted hyperlipemia in patients with high blood sugar values complicating acute pancreatitis. The lipemia disappeared with insulin therapy. The author has observed five instances of milky serum in pancreatitis. In three of the patients, no evidence of disturbed carbohydrate metabolism was noted nor was there a history compatible with idiopathic hyperlipemia. Careful laboratory study of the lipid problem was not carried out.

Fat embolism arising from the areas of fat necrosis may contribute to a fatal outcome in the disease.[8] In such circumstances fat stains of the lungs should be part of the histological study.

Hypopotassemia often occurs in the first 48 hours in severe pancreatitis.[8] Unless treated it does not return to normal until the patient is taking food by mouth. Several factors may contribute to the low serum potassium. The alarm reactions and loss by nasogastric suction are to be considered.

In severe necrotizing pancreatitis damage to the islets may produce diabetes mellitus,[27] even of such severity that acidosis supervenes. This possibility should not be overlooked as insulin therapy may prevent death.

CHRONIC PANCREATITIS

Recurrent attacks of acute pancreatitis often lead to chronic changes in the gland, but this is not invariably so. Occasionally a patient may have repeated attacks over many years and yet none of the characteristic symptoms of chronic relapsing pancreatitis intervene.

Early in chronic pancreatitis the amylase content of the blood may remain consistently elevated. Once fibrosis and atrophy have occurred in the pancreas, recurrent acute attacks may not be accompanied by such high serum amylase values as those ordinarily observed. Pseudocysts are common in chronic relapsing pancreatitis and may also cause persistently high amylase levels.

The more common physiological abnormalities in chronic pancreatitis are owing to the failure of the external secretion to enter the intestine in sufficient quantity to digest fats and proteins; steatorrhea and creatorrhea result. Contrary to the usual statement, failure of the internal secretion may occur fairly early in the course of the disease and diabetes mellitus will be the presenting symptom or the first complication noted after one or more attacks.[9] Glucose tolerance tests should be repeatedly done in patients with chronic relapsing pancreatitis.

The precipitation of calcium carbonate in the pancreatic juice to form calculi in the ducts and acini of the pancreas is another common complication. This, the author believes, is caused by the supersaturation of the juice with calcium and carbonate.[10] The demonstration of calculi by roentgenograms gives positive proof of chronic pancreatitis. In recent years, the author has noted calculi particularly in chronic alcoholics with pancreatitis which is often associated with cirrhosis.

Since the work of Agren and Lagerlof,[1, 2] many efforts have been made to measure the amount and concentration of enzymes in the external secretion as a guide to the progress of chronic pancreatitis.[19, 5, 21] Secretin, Mecholyl® or Urecholine® have been used to stimulate secretion. These methods require a tube with a double lumen, one for the duodenum and one for the stomach. This test is time-consuming and difficult for the patient, but valuable information can be gained from it.

Several investigators[16, 29, 12] have tried to arrive at the same conclusion by giving the patient a pancreatic stimulant and measuring the rise in serum amylase. There is a difference of opinion as to how helpful the results may be to the clinician. It seems safe to say that further investigation is necessary before a simple and highly diagnostic test for pancreatic function is evolved.

CARCINOMA OF THE PANCREAS

Physiological changes that aid in the diagnosis of cancer of the pancreas are few and vary with the location and extent of the tumor. Cancer of the tail of the pancreas usually does not affect the external or internal secretion. Cancer of the body of the gland may obstruct the duct of Wirsung or destroy extensively the secreting tissue. The same is true of cancer of the head of the pancreas, and in addition obstruction of the common duct occurs.

Fewer than half of the patients have increased content of amylase and lipase in the blood. If there is extensive destruction, diabetes may occur.

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Function tests using secretin, Mecholyl or Urecholine or some combination thereof have been attempted in the same manner as in the diagnosis of chronic pancreatitis. The most valuable test seems to be determination of the response of the external secretion to secretin given intravenously. Dreiling,[7] using this test, noted there was a decreased volume of juice in a high percentage of patients with cancer of the head and/or body of the pancreas. Cancer of the body with great destruction caused a pronounced decrease in the concentration of amylase and bicarbonate as well as small volume.

The serum secretin test,[16, 29] in which the amount of amylase in the blood is determined before and after injection of secretin, resulted most often in a failure of the amylase to rise. However, in some patients, presumably those with obstruction near the head of the pancreas, the serum amylase increased sharply.

Duodenal drainage has an advantage over the serum secretin test in that the bile pigments can be studied at the same time. Because secretin is an efficient cholagogue, the gallbladder empties. Thus, in jaundiced patients a normal flow of pancreatic juice in the absence of any biliary pigment would place the obstructive lesion in the biliary tract.

The early diagnosis of cancer of the pancreas remains a difficult problem that awaits more discerning methods.

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Adenoma of the Islets of Langerhans

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• An adenoma of the islets of Langerhans may be found anywhere in the pancreas but is more common in the body and tail, and more than one tumor may be present. When such a tumor produces insulin the symptoms observed are those of hyperinsulinism, varying from pallor, sweating, weakness and amnesia in mild cases to coma and convulsions in the more severe.

The diagnosis rests largely on Whipple's triad, namely, the onset of symptoms during the fasting period or after exertion, sugar content in the blood of less than 50 mg. per 100 cc. during an attack, and immediate relief of symptoms upon the administration of glucose in one form or another.

Surgical removal of an adenoma is the only known cure, and unless it is done the patient will eventually die of the effects of prolonged hyperinsulinism. The procedure entailed may be relatively simple, or fraught with great difficulties and postoperative complications of a major nature.

The literature indicates that there has been a mortality rate of 8 or 9 per cent associated with the surgical treatment of this condition.

WHEN Banting and Best[1] in 1922 discovered insulin, the long sought hormone produced by the islets of Langerhans, the discovery was not only a boon in the treatment of diabetes mellitus, for it was quickly to become the basis for one of the most dramatic and interesting chapters in the history of surgery. One year after Banting and Best's discovery, Harris[5] suggested the possibility of the occurrence of hyperinsulinism, analogous to hyperthyroidism, as the cause of hypoglycemic symptoms in persons not taking insulin. This hypothesis was proved correct in 1927 when Wilder and co-workers[12] reported the first case of hyperinsulinism associated with a tumor of the pancreas. The tumor was a carcinoma of the islets of Langerhans with metastasis to the liver, and from one of the metastatic nodules was obtained a substance which proved to have an insulin-like action when injected into rabbits. In 1929 Graham[7] removed from the pancreas of a patient with symptoms of hypoglycemia a small, circumscribed tumor which was considered to be a slowly growing carcinoma of the islet tissue. The operation was followed by complete relief from the symptoms; it effected the first known cure of hyperinsulinism caused by a tumor of the islets. Howard, Moss and Rhoads[6] in a recent review of reports of 398 cases noted that in 313 cases (78.6 per cent) the lesion was described as benign adenoma, in 37 (9.3 per cent) as carcinoma and in 48 (12.1 per cent) as tumors in which malignant change was suspected. However, only 200 of 361 patients with localized tumors were operated upon for hyperinsulinism. In the other 161 the tumors were not observed until autopsy; in some instances the tumors had been "missed" at operation, in others they were observed in the bodies of patients who had died from undiagnosed hyperinsulinism, and in some cases were noted incidentally in other autopsy observations. A tumor was observed at the time of operation in only 82 of the 200 cases in which exploration was carried out. Of the 118 patients in whom no tumor was found at exploration, 37 eventually were found to have an islet-cell tumor; in 12 of the 37 cases the adenoma was resected blindly during subtotal pancreatectomy, in 12 the tumor was found and removed at a subsequent operation, and in 13 the tumor was not found until autopsy. On the other hand in 81 patients an islet-cell tumor was never observed. Fifty-six of the patients in that group had partial pancreatectomy; four of them died of the operation and 26 had satisfactory therapeutic result. The data indicate that in many cases both diagnosis and treatment are beset with difficulties and that the degree of success achieved thus far in these aspects of islet-cell adenoma leaves room for considerable improvement.

Reporting upon autopsy studies, Lopez-Kruger and Dockerty[8] noted that only in about one case in five does an islet-cell adenoma produce insulin in amounts large enough to cause symptoms of hypoglycemia. It is known that different types of cells, the counterparts of those found in normal islet tissue, are present in an adenoma, and while many authorities are of the opinion that insulin is produced by the cells of the beta type, yet in histological studies of insulin-producing (functioning) and non-insulin-producing (non-functioning) adenomata the answer to why some adenomata produce insulin while others

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From the Symposium on Diseases of the Pancreas, presented before the Sections on General Medicine, General Surgery and Radiology at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

do not has not yet been found. Any symptoms to which a non-insulin-producing adenoma may give rise will only be those produced by the tumor *per se;* and as most such adenomata do not reach sufficient size to cause any symptoms at all, they are usually found incidentally, most frequently at autopsy.

Assuming that the amount of islet tissue in a normal pancreas represents about 2.5 per cent of the whole gland, the presence of a functioning adenoma weighing 1.5 grams would increase the insulin-producing tissue by nearly 70 per cent. No wonder, then, at the havoc such tumors cause in the sugar content of the blood.

Hyperinsulinism owing to an islet-cell adenoma occurs most commonly in the fifth and sixth decades of life, rarely later. The incidence is slightly higher in males than in females.

Approximately 70 per cent of islet-cell adenomata are situated in the body or tail of the pancreas. In about 12 per cent of cases more than one tumor is present—usually not more than two, but as many as five have been found.

Adenomata at this site vary greatly in size. Some are only 1 mm. in diameter. The largest reported was 15 x 13 x 10 cm. and weighed 673 gm.[2] It was an insulin-producing tumor but, despite its size, caused hyperinsulinism of no greater degree than that produced by much smaller adenomata. The author knows of no case of hypoglycemic symptoms owing to adenoma of the islet-cells in which the tumor was less than 1 cm. in diameter.

SYMPTOMS AND DIAGNOSIS

The time-tested triad postulated by Whipple[11] as diagnostic of the presence of an islet-cell adenoma needs little or no modification. The onset of symptoms is always during the fasting period or after exertion. The symptoms are referable chiefly to the nervous system; they may vary in intensity from minor mental aberrations and amnesia resembling petit mal to unconsciousness and convulsions more violent than those of grand mal. Usually the content of sugar in the blood during an attack is less than 50 mg. per 100 cc. However, the fact that sugar content quite as low has been observed in patients with islet-cell adenoma at times when there were no such symptoms present, indicates that the rapidity of decrease in the sugar content may play some part in determining the time of onset of an attack. While ordinarily the administration of glucose effects immediate relief of symptoms, it should be borne in mind that in rare instances, such as that recorded by Mitchell and co-workers,[9] it may fail to do so, probably because of irreversible changes in the central nervous system produced by the oft-repeated hypoglycemic state.

There seems to be no unanimity of opinion regarding the merits of the intravenous glucose and intravenous insulin tolerance tests to determine the presence of hyperinsulinism, but in two cases observed by the author the results of the latter test were in accord with Collip's[4] postulate and thus proved of definite value.

In considering differential diagnosis, it would appear that other causes of hypoglycemia (except hyperplasia of the islet tissue itself), such as diseases of the pituitary gland, adrenal glands, thyroid gland or liver, are unlikely to produce the profound degree of hypoglycemia characteristic of islet-cell adenoma; and in the event disease of these other glands were sufficiently advanced to give rise to such severe hypoglycemia, it is probable that the etiological factor would be apparent.

Roentgen studies after a barium meal may be of help in diagnosis if the adenoma is big enough or is in such a position as to cause deformity of the duodenal loop. Using the more exact Engel-Lysholm technique for roentgen examination of the pancreatic bed, Olsson[10] observed an adenoma only 1.5 cm. in diameter situated on the anterior surface of the pancreas.

TREATMENT

The only hope of cure lies in removal of the adenoma. As the tumor may be in any portion of the gland, the incision must be such as to permit adequate exposure of the entire pancreas. It may be either vertical or transverse, although most surgeons appear to favor the latter. The gland is approached through the gastrocolic omentum between the stomach and the transverse colon. Sometimes the adenoma or a localized swelling produced by it may be seen as soon as the pancreas is adequately exposed, or a localized tumor, firmer than the gland tissue, may be readily felt on palpation. The finding of a tumor, however, must not deter the surgeon from painstaking search of the remaining portion of the gland, as more than one adenoma may be present. Moreover, as tumors may also occur in aberrant pancreatic tissue, the immediate environs of the pancreas, at least, must be examined carefully. In the event no tumor can be found, there are two possibilities to consider: partial pancreatectomy in which the body and tail of the gland are removed, and total pancreatectomy. It is to be emphasized, however, that neither partial nor total pancreatectomy should even be considered until after the head of the gland has been thoroughly examined; and examination of the head of the pancreas cannot be considered thorough unless the duodenum is mobilized and the gland tissue gently freed enough to permit of palpation of it between the thumb and finger. Not all tumors in the head of the pancreas can be felt by palpation through the anterior surface alone, as postmortem evidence attests.

If resection is deemed necessary, choosing between partial and total pancreatectomy involves the following considerations:

Partial pancreatectomy. (1) It is more likely that the tumor is in the body or tail of the gland. (2) Removal of those portions does not entail the interference with the biliary and gastrointestinal tracts that is necessary in removal of the head. (3) There is always a possibility, slight though it may be, that the lesion present is hyperplasia of the islet tissue, rather than an adenoma. If evidence of hyperplasia is noted when pathologic examination of the removed body and tail is carried out, the surgeon has grounds for hope that the operation done was extensive enough at least to relieve the symptoms if not effect complete cure.

Total pancreatectomy. The operation is one of greater magnitude and it entails trauma to the biliary and the gastrointestinal tracts. However, when an adenoma has not been found in careful examination of the pancreas, the only way to make certain that a tumor is not left behind is to remove the head of the gland as well as the body and tail. Physiologic disturbance following total pancreatectomy is relatively slight.

Pancreatic operations, sometimes relatively simple, may be exceedingly difficult, and the likelihood of complications following operations upon this gland appears to be definitely greater than that experienced in connection with operations upon other abdominal viscera. Even enucleation of an islet-cell adenoma is not without risk; a mortality rate of 8 or 9 per cent has been associated with that procedure.

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Standard of Living

"People who are to be comfortable are accustomed to lie on sofas, and dine off tables, and they should have sauces and sweets in the modern style." . . .

"Then we must enlarge our borders; for the original healthy state is no longer sufficient. Now will the city have to fill and swell with the multitude of callings which are not required by any natural want. . . . And living in this way we shall have much greater need of physicians than before?"

"Much greater."

—*Plato's Republic*, translated by Benjamin Jowett (World Publishing Co., 1946)

Operations on the Pancreas

Some Technical Considerations

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• Many diseases of the pancreas formerly universally considered fatal, now are known to be amenable to surgical therapy. Pancreatic cysts, pseudocysts, calculi, inflammation, and benign and malignant tumors all can be dealt with effectively by operation. In this presentation various surgical techniques which have proved to be of therapeutic importance are considered.

Considered from a surgical point of view, the pancreas is intimately related anatomically with neighboring organs and contiguous structures, such as the duodenum, the spleen, the common bile duct and the superior mesenteric and splenic vessels. At laparotomy it is obscured from view by the stomach, the gastrocolic omentum and the colon. The uncinate process almost completely surrounds the superior mesenteric vessels, while the lower end of the common duct usually traverses the head of the pancreas before entering the duodenum. Because of these close anatomical relationships, surgical operations upon the pancreas are not simple. They are usually time-consuming and may become extremely hazardous, especially in relation to the possible danger of injury to neighboring structures. Serious hemorrhage as well as persistent duodenal, bile or pancreatic fistulae are the well known consequences of faulty operative techniques.

Probably the most common lesions of the pancreas of surgical importance are acute and chronic inflammations. Many different surgical procedures, none universally successful, are currently employed in the treatment of pancreatitis. Most of them are based upon the concept that the disease is caused by increased pressure within the pancreatic ducts, presumably owing to obstruction of the main pancreatic duct, with continued secretion of pancreatic juice, or to obstruction in the common bile duct with reflux of bile into the pancreatic ducts.

Now that it has become recognized generally that laparotomy with incision and drainage of the pancreas is not effective treatment for acute pancreatitis of either the edematous or the acute hemorrhagic type, the acute stages of the disease, when recognized, are treated conservatively. Except in mild edematous pancreatitis, shock and rapid circulatory failure are early manifestations and must be treated vigorously. Surgical intervention at this stage causes death in a relatively high proportion of cases, and as the symptoms are much like those of other acute upper abdominal lesions which require early operation, correct differentiation becomes imperative. An elevation in serum amylase is an invaluable diagnostic aid.[7]

Although some surgeons have advocated T-tube drainage of the common duct in the acute stage of pancreatitis, evaluation of its effectiveness is difficult. Most surgeons agree that medical management in this stage is more effective. Splanchnic block with procaine is said to relieve the pain of an acute attack and to cause relaxation of the sphincter of Oddi, thus diminishing back pressure in the pancreatic ducts.[9] Here again it is difficult to know how long a given attack might have persisted without this added treatment. The author believes that most acute attacks of pancreatitis of the edematous type will subside spontaneously and that the acute hemorrhagic form will cause death in a high proportion of instances regardless of the kind of treatment.

Relapsing pancreatitis or recurring subacute pancreatitis has been treated by a number of procedures directed toward either improving drainage from the pancreatic duct or reducing pancreatic secretion through the reduction of gastric secretions. DeTakats and Walter[3] expressed belief that vagotomy or subtotal gastric resection may sufficiently decrease gastric secretions. Results from the various procedures have not been encouraging.

Chronic biliary tract disease is frequently associated with relapsing pancreatitis. Often cholecystectomy or choledochostomy for correction of the former will also relieve the latter. Prolonged drainage of the common bile duct has proven to be a very useful procedure. This can be accomplished either by T-tube drainage or by cholecystojejunostomy or choledochojejunostomy. Ascending infection of the biliary tract is liable to occur, however, unless anastomosis is made into a defunctionalized loop of

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bowel. Anastomosis to an intestinal limb of Roux-Y type or to a long loop of small bowel shunted with an entero-entero anastomosis tends to prevent ascending infection.

Many physicians have directed treatment toward relief of spasm or other kinds of obstruction of the sphincter of Oddi.[3] Archibald[2] as early as 1913 suggested division of the sphincter of Oddi. Doubilet and Mulholland[4] devised a special instrument which may be passed through the common duct into the duodenum, severing the sphincter of Oddi. Some surgeons have reported good results from transduodenal sphincterotomy.

Interruption of the autonomic sensory fibers by various procedures has been proposed not only as a means of controlling spasm of the sphincter but also to relieve pain, just as in the acute state of the disease. Some investigators have reported good results with simple unilateral splanchnicectomy while others have proposed more extensive procedures such as bilateral dorsal sympathectomy, splanchnicectomy and vagotomy.

Chronic pancreatitis, pancreatic calcinosis and pancreatic lithiasis are so frequently associated one with the other that they may be considered together in discussion of treatment. Intelligent surgical management of any of the conditions depends upon the clinical manifestations and the localization of the process. Rarely, a stone obstructing the main pancreatic duct can be removed by direct incision into the duct, followed by T-tube drainage.[5] Usually calcification is diffuse throughout the gland and nothing short of removal of all or part of the pancreas will suffice. When the disease process is confined to the head or tail of the pancreas, it may be successfully treated by partial excision of the gland. Usually, the disease involves so much of the gland and destruction is so extensive that there is little if any gland to be preserved. In such circumstances treatment is directed toward the control of pain. Total pancreatectomy followed by substitution therapy has been successful in a few cases. However, pancreatectomy for the relief of extensive pancreatitis with or without calcinosis is an extremely hazardous procedure, owing mainly to the danger of uncontrollable hemorrhage in the extremely vascular field.[13]

Neoplasms of the common duct, of the ampulla of Vater, of the head of the pancreas and of the duodenum involving the pancreas all lead to jaundice. The interest of many surgeons in recent years in problems associated with the surgical treatment of these conditions has led, in a large measure, to present concepts of operations on the pancreas. Means of controlling hemorrhage in jaundiced patients, control of infection, safe anesthesia for prolonged periods and meticulous surgical technique have made extensive resections of this region relatively safe and in certain conditions very much worthwhile. Often the major problem at the time of operation is the sometimes exceedingly difficult one of differentiation between stone in the common duct, chronic pancreatitis and periampullary carcinoma. Biopsy with a frozen section is not only apt to be misleading but can lead to serious postoperative complications. Usually clinical impression must be relied upon in determining the course of therapy.

The operability of malignancies in this region is often difficult to determine. Invasion of the tumor into the superior mesenteric vessels makes radical pancreaticoduodenectomy impractical. Although it is stated that the best way to determine whether or not such invasion is present is to reflect the duodenum and head of the pancreas medially, in the author's experience the uncinate process is usually so large that it surrounds the superior mesenteric vessels, both laterally and posteriorly, and reflection of the duodenum and pancreas only displaces these vessels and does not expose them. By transecting the gastrocolic and gastrohepatic omentum the junction of the body and head of the pancreas can be exposed and by gentle blunt dissection of the pancreas from its inferior and superior margins along the course of the mesenteric vessels, it is possible to determine whether there is fixation of a tumor mass to these vessels. In the author's opinion, other contraindications to resection are distant metastasis, irresectable local extension of tumor, and involvement of the portal vein with tumor.

If radical pancreaticoduodenectomy is undertaken, the most simple and most rapid reconstruction is important. The anastomosis of the bile duct to the small bowel should be at a point proximal to the gastroenterostomy, as should the anastomosis of the pancreatic stump. This is accomplished best by resecting the entire duodenum to a point beyond the ligament of Treitz. The jejunum then may be brought up anterior to the transverse colon and anastomosed end-to-end to the open end of the dilated common duct. If too great a discrepancy in size exists, an end-to-side anastomosis may be made and the open end of the jejunum closed. The stump of the pancreas is anastomosed end-to-side to the jejunum after the open end of the pancreas is closed with interrupted silk sutures. The pancreatic duct is permitted to protrude beyond this closed end. An incision is made in the wall of the jejunum through the serosa and muscularis just long enough that the closed end of the pancreas will fit into it. As these two structures are approximated, the protruding pancreatic duct is introduced into the lumen of the jejunum through a puncture wound in the mucous membrane. The duct and mucous membrane are tacked together with one or two fine catgut sutures. The serosa of the bowel is sutured then to the capsule of the pancreas with interrupted silk sutures, thereby jutting the closed end of the pancreas against the outer surface of the mucous membrane of the bowel. The open end of the stomach then is sutured end-to-side to the jejunum. With this method there are only three suture lines, and as the bile duct and pancreas empty into a defunctionalized segment of bowel well above the gastroenterostomy, reflux of gastrointestinal contents into the biliary or pancreatic tree is prevented.

The utilization of this standard procedure for all conditions requiring resection of the head of the pancreas and duodenum has led to a surprisingly low operative mortality rate and a minimum of postoperative complications.

The successful management of cysts of the pancreas depends upon the underlying pathological condition which has led to the development of the cyst. True cysts are lined with epithelium and may be divided into three main classes: Retention cysts, congenital cysts and proliferative cysts. Pseudocysts are localized collections of fluid secondary to traumatic rupture or inflammation within the gland. The surgical procedure to be employed is dependent upon the type of cyst encountered, at operation. Because proliferative cysts are true neoplasms comprising the cystadenomas and cystadenocarcinomas, they must be extirpated.[12] Incision through pancreatic tissue beyond the gross limits of the tumor may be necessary to find a proper cleavage plane and to insure a margin of normal pancreas about the excised tumor mass. At times it is necessary to remove entire portions of the pancreas to insure complete extirpation of a potentially malignant cyst.

In contrast to proliferative cysts, pseudocysts of the pancreas occur quite frequently and may be treated by marsupialization and drainage, extirpation or internal drainage. Excision is rarely possible because of the fixation secondary to the inflammatory reaction which accompanies their formation. Dissection is difficult because it jeopardizes such important structures as the common duct and superior mesenteric, hepatic and splenic vessels, as well as the portal vein.

The major objection to marsupialization[10] is the persistence of a draining sinus tract. Digestion of the abdominal wall about the cutaneous opening may be expected and the condition is difficult to manage. Other complications are secondary infection, hemorrhage and, often, pronounced debility.

Internal drainage as a method of treatment not only eliminates the fistula formation of external drainage but is effective and is not as formidable a surgical procedure as complete excision. Various channels of drainage have been used—anastomosis of the cyst to the stomach, to the duodenum, to the jejunum and to the gallbladder—with varying degrees of succcss. Experience seems to have proven that internal drainage is best accomplished by anastomosis between the cyst and a defunctionalized loop of jejunum. This is accomplished either by the employment of a long loop of jejunum isolated by an entero-entero anastomosis or best by drainage into the defunctionalized limb of a Roux-Y intestinal anastomosis. The prevention of regurgitation of gastrointestinal contents into the cyst is important. The inflammatory, fibrous lining of a pseudocyst facilitates its obliteration after prolonged drainage.

Islet cell tumors of the pancreas may produce hyperinsulinism, causing the syndrome well known in association with insulin shock. Since W. J. Mayo's report of a malignant islet cell tumor in 1927 and Graham's report of a permanent cure of symptoms of hyperinsulinism following removal of a benign adenoma of islet cell tissue in 1929, a number of such cases have been recorded.[6] It is now recognized that surgical operation is the treatment of choice. Finding the tumor at the time of operation is often extremely difficult. It may be very small and of the same color and consistency as the remaining pancreatic tissue. Sometimes more than one tumor is present. For these reasons the entire pancreas must be exposed and adequately explored. The tumor when found is excised. When no tumor is found, resection of the body and tail (where about 80 per cent of the growths arise) and immediate inspection by a competent pathologist is advisable. If a tumor is not found in the excised portion, the head of the pancreas must be resected.

The results when the tumor is located and removed are excellent. Occasionally, good results follow extensive resection, even though no tumor is observed in the specimen. Only a small percentage of pancreatic tumors are malignant.

Annular pancreas, an exceedingly rare condition, may occasionally lead to chronic duodenal obstruction owing to the growth of a ring of pancreatic tissue around the second portion of the duodenum. The symptoms are best relieved by by-passing the process rather than by operation upon the gland because of the danger of injury to the pancreatic ducts. Gastric resection is indicated when the condition is complicated by gastric or duodenal ulcer.

Injuries to the pancreas caused by either concussive or penetrating wounds of the abdomen usually require immediate surgical management.[8] Pancreatitis secondary to blunt trauma often is unrecognized as such at the time of injury and may therefore lead to subsequent development of pancreatic pseudocyst. Penetrating wounds of the abdomen rarely involve the pancreas alone. The injury to the pancreas is usually discovered in association with penetrating injury to surrounding viscera. Complicated injuries of this kind must be dealt with as indicated by conditions present at the time of operation. Careful repair of lacerations with ligation of the injured ducts should be carried out when possible. Resection of badly damaged pancreatic tissue often will prevent serious postoperative drainage and digestion. Proper drainage must be instituted if leakage of pancreatic secretions appears likely.

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Use of Gamma Globulin in Poliomyelitis

WHETHER GAMMA GLOBULIN will be effective in the prevention of paralytic poliomyelitis is not now known. On the basis of animal experiments and preliminary study on humans, it is possible that globulin will have value in human poliomyelitis, but serious questions remain to be answered before such a hope can be substantiated. Nevertheless, public dissemination of information on the status and objectives of current studies, incompletely presented or misunderstood, has created a serious demand for gamma globulin which cannot be met.

Virtually the entire output at current production rates is required to meet the demand for prevention or modification of the course of measles and infectious hepatitis.

Under the circumstances, it is obvious that the existing limited supply and current production of gamma globulin should be reserved for use in these diseases in which its efficiency has been established.

—Statement supplied by the chairman of the subcommittee on blood of the Health Resources Advisory Committee.

Coxsackie Virus in Southern California

Isolation of a Strain from Stools of a Patient

RUTH A. BOAK, M.D., BENJAMIN F. KLAUMANN, M.D., and
C. BRADLEY WARD, Jr., M.S., ***Los Angeles***

• *Thirty-three stool specimens from 29 patients were examined for Coxsackie virus by the inoculation of suckling mice. Such a virus, designated "California I," was obtained from two stool specimens collected on successive days from a patient with so-called nonparalytic poliomyelitis.*

Neutralizing antibodies for the California I strain of Coxsackie virus could not be demonstrated in serum obtained from the patient early in the illness, but were present in convalescent serum.

Serum from the patient's daughter, who previously had had a similar illness, neutralized the strain of virus isolated from the father.

In pathologic examination of the skeletal muscles of mice infected with the California I virus, lesions typical of those produced by Coxsackie virus, group A, were noted.

California I strain of the virus was not neutralized by immune serum prepared from several other strains of Coxsackie virus.

WHILE STUDYING several small epidemics of poliomyelitis in upstate New York in 1947, Dalldorf and Sickles[3] isolated a virus by the intracerebral injection of suckling mice and hamsters with supernates from fecal specimens obtained from two children living in Coxsackie, N. Y. The virus, now designated "Coxsackie virus," produced paralysis and death in the mice and hamsters. Upon pathologic examination widespread degeneration of the skeletal muscles was observed. In the same year, in Wilmington, Del., an outbreak of atypical poliomyelitis occurred in which multiple infections were observed in families and the paralysis was transient in many cases. Furthermore, several investigators failed to isolate the classic virus of poliomyelitis. Dalldorf[4] examined 21 specimens of feces from patients in the area and in five instances again recovered a virus that produced paralysis and death in suckling mice.

During the years 1947, 1948, and 1949, Dalldorf and Gifford[5] examined 517 stool specimens from patients in large and small epidemics of poliomyelitis and from a few sporadic cases. Coxsackie virus was obtained from 30 (5.8 per cent) of the specimens. Dalldorf[6] observed that most of the strains of virus produced extensive generalized degeneration of striated muscles in mice, and a few strains caused, in addition to the muscle degeneration, lesions in the central nervous system. Those that caused only muscle degeneration were classified as group A viruses, and those that caused lesions in the central nervous system were classified as group B. In 22 of the previously mentioned 30 cases the viruses isolated were observed to be group A, and some paralysis had developed in 14 of the patients. In the remaining eight cases the viruses were group B, and none of the patients was paralyzed.

Melnick, Shaw and Curnen, [13, 16] isolated a similar virus from patients. They detected Coxsackie viruses in sewage and flies and described cases of the disease among laboratory personnel working with the virus. Subsequently, the virus was isolated in other areas of the United States,[2, 8, 9, 11, 15] also in Canada,[1, 9] Denmark[12] and England.[7] Slater and Syverton[17] in 1950 isolated Coxsackie virus from a patient with nonparalytic poliomyelitis in Minnesota and maintained the virus in tissue culture for 24 successive passages.

Coxsackie virus produces a variety of symptoms; namely, fever, headache, backache, muscle pain and spasm, stiff neck, abdominal pain, nausea, vomiting, pleural pain, sore throat, malaise and anorexia. The most consistent symptoms are fever and headache, yet they vary in different epidemics. Paralysis occurs in a small percentage of cases. The clinical laboratory findings are limited chiefly to pleocytosis of the cerebrospinal fluid. Two rather distinct clinical syndromes, other than that resembling poliomyelitis, have been associated with the virus. Findlay and Howard[7] in England recovered the virus from patients with so-called epidemic pleurodynia, which has been known as Bornholm disease. Hueb-

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ner and co-workers[10] reported isolation of group A Coxsackie virus from 32 patients with herpangina in Maryland.

Coxsackie virus has been detected in several areas of the United States, but to date it has not been reported in the southwestern states with the exception of Texas. The present study was undertaken to determine if the virus could be detected in California. Poliomyelitis is endemic in the Los Angeles area throughout the year and the so-called nonparalytic form of the disease is prevalent.

MATERIALS AND METHODS

Stool specimens and paired blood samples were collected during the months of May, June, July and August 1951 from 29 patients at the Long Beach Veterans Administration Hospital with tentative diagnoses including septic meningitis, nonparalytic poliomyelitis, pneumonitis, and ulcerative colitis. The sera for neutralization tests and the stool specimens were stored at —70° C. The inoculum was prepared from the stool specimen, after thawing, by making a 20 per cent suspension in distilled water. The suspension was ground in a Ten Broeck grinder and centrifuged in a Spinco for one-half hour at 13,000 rpm. The supernate was exposed for one-half hour at room temperature to 1,000 units of penicillin and 10.0 mg. of streptomycin per milliliter. Three-hundredths of a milliliter of the inoculum was injected either intramuscularly or intraperitoneally into mice from one to two days old. The mice were observed at frequent intervals and whenever paralysis appeared they were removed and immediately frozen at —70° C. Inoculated mice that had nervous symptoms or that appeared unthrifty were sacrificed and washed with ether. Subsequently, the feet, tail, head, skin and viscera were removed and the remaining skeletal tissue finely minced for repeated animal passage. A 20 per cent suspension of tissue in distilled water was prepared in a Ten Broeck grinder, and centrifuged at 1,000 rpm. in a cold room for five minutes. Groups of suckling mice were injected either intramuscularly or intraperitoneally with 0.03 ml. of the supernate. In a few instances, blind passages were repeated several times.

Identification of the virus was attempted by neutralization tests using immune sera prepared from known strains of Coxsackie virus. The immune serum was produced by inoculating three-week-old mice intramuscularly or intraperitoneally with 0.1 ml. of a 10 per cent suspension of infected muscle-bone. Two inoculations were made each week for three weeks. After a rest period of one week, a single inoculation was made. The mice were bled two weeks later. The neutralization tests described by Melnick and Ledinko[14] were carried out.

The suckling mice were obtained from two separate colonies of white mice. They were pooled from several litters and redistributed to the mothers to avoid the use of one litter for a single inoculum. The inoculated mice were isolated in special quarters distant from the normal mouse colony and from the laboratory in which mice infected with known strains of virus were housed. At various times, litters from the two normal mouse colonies were tested for Coxsackie virus and always found to be negative.

RESULTS

The inoculum from only two of 33 stool specimens produced paralysis in suckling mice. The two specimens were obtained from the same patient on the sixth and seventh days of illness. All of a group of ten mice injected with inoculum from the first specimen, and all of a group of six given inoculum from the second specimen had paralysis in five days. Inoculum from a third specimen obtained from the patient 20 days after the onset of illness did not produce paralysis in a litter of six one-day-old mice.

The patient from whom the specimens were obtained was a 32-year-old white male cement mill operator. He was well until the day before admission to the hospital. The illness began with fever, chills, headache and backache, with stiff neck, nausea and vomiting on the second day. The acute illness continued for five days with fever as high as 103.6° F. Pain in the chest was present during the first week of illness. Nuchal rigidity persisted for 14 days. During the first two weeks of illness there were from 75 to 750 lymphocytes per cu. mm. of cerebrospinal fluid. The patient was discharged 19 days after admission to the hospital and remained well. As the patient had said that his eight-year-old daughter had likewise been ill with similar symptoms—sore throat, fever, headache, stiff neck—three weeks before he himself had become ill, serum was obtained from her and it neutralized the virus isolated from the father.

The virus isolated from the two stool specimens from the patient on successive days was not neutralized by immune sera prepared from Dalldorf, type I, II, III, Highpoint, Texas, and Connecticut 5 strains, but was neutralized by a homologous antiserum. Serum obtained from the patient early in the illness was ineffective but serum collected 20 days after the onset of the disease neutralized the virus. The virus has been designated as "California I."

In a pathologic examination of the skeletal muscles of mice infected with the California I strain, extensive degeneration was observed. The lesions were typical of those produced by group A Coxsackie virus. No lesions were noted in the tissues of the central nervous system.

DISCUSSION

Although a virus, identified as of Coxsackie type, was isolated from only two of 33 stool specimens obtained from 29 patients, it should be pointed out that the patients were adults ranging in age from 28 to 60 years, an age group older than that in which the virus is most prevalent. In the series reported upon by Dalldorf and Gifford,[5] 73 per cent of the patients were under ten years of age. Although no reports have appeared in the literature that Coxsackie viruses have been isolated in California, they would be expected to be as prevalent here as elsewhere. Virologists have not made a diligent search. The constant endemicity of poliomyelitis in Southern California is well known. Inasmuch as one form of illness resulting from infection with Coxsackie virus is similar to poliomyelitis, it may, in some cases, be erroneously diagnosed as poliomyelitis. The differentiation of the two diseases is dependent upon the intracerebral inoculation of monkeys to determine whether the virus of poliomyelitis is or is not present.

In the case of the patient from whom California I virus was obtained, it is probable that the patient's daughter had been infected by the same virus three weeks earlier than he, inasmuch as she had similar symptoms and serum obtained from her neutralized the virus obtained from him.

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Abscesses of the Breast

Recurring Lesions in the Areolar Area

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• *Subareolar abscesses beginning either in infected skin glands or in breast ducts have an extraordinary tendency to recur and to be resistant to treatment. About three-fourths of 64 patients observed had from one to many recurrences of abscess after either spontaneous or surgical drainage, and many even after wide excision of scar in an interval of quiescence.*

The most successful of a number of methods of treatment used was wide removal of scar and underlying chronic abscess cavity combined with removal of the ampulla and mouth of a connecting duct.

In a substantial number, after either drainage or unsuccessful excision, the process gradually subsided over a period of months or years.

Cancer has not been observed in any of the 64 patients.

ACUTE INFECTIOUS MASTITIS in the non-lactating breast is much more common than is generally recognized. Probably in most cases the infection arises in the stagnant fluid of a cyst or a dilated duct. Many of these lesions subside spontaneously with complete disappearance of any lump that had been palpable at the height of the inflammation. When such a lesion does point and drainage is necessary, if it is located away from the areolar area it commonly behaves as a non-specific abscess in any other part of the body—heals promptly and permanently. But when an abscess occurs so that either spontaneous or surgical drainage must be through the areola or at its edge, it has a remarkable tendency to recur repeatedly and to be highly resistant to permanent cure whatever the method of treatment. In one patient observed by the authors such a lesion flared up, drained pus and closed at intervals of a month or less for years. In other patients abscesses formed again after intervals of six months to more than two years of apparently complete quiescence. In a few instances the lesions remained as persistent draining sinuses.

The reason for this behavior is not entirely clear and may not, in fact, always be the same. The original infection may be in a gland of the skin or subcutaneous tissue but is by far most commonly in a duct of the breast. It has been suggested that lipids from the specialized apocrine glands of the areolar region, discharged into tissue by an incision, by spontaneous pointing or by a blow, may serve as a foreign body — in effect producing a chronically infected area of "fat necrosis." This is perhaps sometimes the explanation. However, the authors have not observed pathologic changes consistent with this theory in sections of the majority of the tissue specimens excised either from the walls of chronic abscesses or from the tissue surrounding them. The suggestion occurs that, if the infection is in a milk duct, the presence of a dilated ampulla with narrow duct mouth may mechanically form a "lake" in which chronic infection persists. This is in agreement with the pathological concept advanced by Zuska, Crile and Ayres in their explanation of persistent fistulas in this region. Confirmation of this theory is offered by the satisfactory results frequently obtained by complete excision of such an ampulla and is further suggested by observation of occasional cases in which indolent flare-up is relieved by drainage through the nipple.

Whatever the explanation, many recurring areolar abscesses eventually require more radical treatment than simple incision and drainage, and even after wide excision are prone to recur.

The authors have observed 64 patients with acute inflammatory lesions under the nipple and areola. In seven of the patients the lesions were bilateral, either at the same or separate times.

In a number of patients the initial lesion was a discrete tender lump with reddening of the skin, which subsided spontaneously without drainage, but in about half of the cases there was recurrence with eventual pointing and spontaneous or surgical drainage in most instances.

In three-fourths of the cases there were from one or two to literally dozens of recurrences of abscess formation. Recurrences were at irregular intervals. One patient had recurrence about every two weeks until mastectomy was done. In other cases quiescent intervals lasted several months to a year and occa-

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sionally several years. A few patients noted that recurrence came just before each menstruation. Two or three had recurrence during pregnancy or lactation. On the other hand, one patient who had had repeated recurrences had none during pregnancy, then abscess developed again after delivery.

ANTIBIOTICS

Neither the sulfa drugs nor the more recent galaxy of antibiotics have seemed to be very effective in either aborting or preventing recurrences. Organisms cultured when pus was available from a freshly opened abscess were usually staphylococcus aureus, hemolytic or non-hemolytic, or rarely streptococcus. In two cases observed within the past year an anaerobic organism was cultured from the pus. In one case the organism was sensitive to chloramphenicol and in the other to penicillin. The experience of the authors with treatment guided by antibiotic sensitivity tests has been too recent and too limited to permit conclusions. In no case was the content of an antibiotic in the blood maintained at an effective level for months at a time. Tubercle bacilli were not observed in smears, cultures or sections of tissue in any case.

Autogenous vaccines were prepared and used in treatment of some of the patients observed early in the present series, but apparently without benefit.

Irradiation at the time of the approach of recurrence or in the interval between abscess formations seemed equally ineffective.

SURGICAL TREATMENT

After it was realized that simple incision and drainage seldom effected cure, excision during an interval between acute episodes was tried. In earlier cases the scar of a quiescent abscess was excised well into normal skin, fat and breast and the wound closed with or without a small drain. Recurrence followed in almost all cases.

Next, in a number of cases, excision in an interval was done and the wound was left sufficiently open to permit packing until healing by granulation occurred. In a few cases the first attempt was successful, but in many abscess recurred in the scar.

In these earlier attempts to cure by excision, the importance of a remaining infected duct was not appreciated. In more recent operations, before excision was completed, the small chronic cavity which can usually be found under the scar was opened and search was made with a fine probe for a duct connecting with the nipple surface. If such a duct was found, the nipple was split and the duct wall to its mouth completely excised. One skin stitch was placed at the base of the nipple to restore its contour and a small pack was left through the nipple as well as through the open or partly open wound at the areolar edge. The final scar on the nipple surface was nearly or quite invisible. In five of the thirteen cases in which this operation was done, abscess recurred.

Following is a summary comparing results of excision of abscess scar with and without a duct to its mouth:

	Total	*Cured*
Excision without duct	28	7
Excision with duct	13	8

(The figures represent numbers of operations—not patients. In several patients, two or even more excisions were carried out.)

In the cases in which resection was followed by recurrence and in those in which for one reason or another resection was not attempted, the final outcome was either continuation of flare-ups, persistence of a sinus, resort to simple mastectomy, or a gradual subsidence of the process. In 21 cases the infection appeared gradually to diminish in virulence: Intervals between recurrences became longer and longer with less reaction and pain, and finally recurrences stopped; or, in a few instances, a sinus persisted for from a few weeks to several years without acute recurring abscesses. Nine patients still had discharge from the lesions or were having mild flare-ups when last observed—in one instance twelve years after the original abscess.

MASTECTOMY

In nine cases, because of the presence of multiple sinuses or of scar contraction and deformity of nipple and breast or because the patient became discouraged after one or more resections, simple mastectomy was finally done. One patient who, despite two local resections, had had recurrences about every two weeks, elected to have mastectomy. The following year a similar process began at the areola of the remaining breast. The patient, quite unwilling to face another prolonged, uncertain and painful course, insisted upon mastectomy at once.

Cancer was not observed in any of the 64 patients, all but seven of whom have been followed from two to twenty years.

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Complications of Intestinal Intubation

With Report of Two Cases of Unusual Complication

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• Many complications may arise from the use of intubation in treatment of intestinal obstruction. They are readily subject to classification and can be prevented by proper precautions.

Two illustrative case reports of unusual complications are presented.

Use of Wangensteen suction, although a large factor in reducing the mortality rate in cases of intestinal obstruction, is not without hazard. Recognition of the causes of complications from intubation will help to obviate them. Knowledge of how to deal with them once they have occurred can greatly reduce the morbidity.

Berger and Achs[1] succinctly outlined the role of intubation in each of three major clinical classifications of intestinal obstruction: (1) paralytic ileus without mechanical cause; (2) mechanical obstruction early; and (3) ileus immediately after operation. They reiterated the oft-repeated warning against procrastination and the use of intubation in cases in which the blood supply to any area of the bowel is impeded.

The danger of intubation is not limited, however, to cases in which there is strangulation; many additional complications have been reported since the use of suction tubes was introduced. The following reports are examples of unusual complications arising from the utilization of long tubes for intestinal decompression.

REPORT OF A CASE

Case 1.—A 53-year-old man was admitted to the hospital with chief complaint of abdominal pain and vomiting of two days' duration. The patient gave a history of intermittent abdominal distention and colicky pain over a period of many years.

Upon physical examination, the abdomen was observed to be diffusely distended. Numerous loops of small bowel were palpated and peristaltic movement was noted. Intestinal colic was pronounced. On rectal examination good sphincteric tone was noted. There were no palpable masses and no ballooning. Soft brown feces were present. In an x-ray film of the abdomen diffuse distention of the small bowel was noted. A typical "step-ladder" pattern with much intraluminal fluid was observed (Figure 1).

Wangensteen suction with a Miller-Abbott tube was applied and parenteral alimentation and antibiotic therapy were carried out. A diagnosis of mechanical obstruction of undetermined cause was made.

Celiotomy was performed on the day of admittance. A thick adhesive peritoneal band arose from the pelvis, "producing mechanical obstruction at a point about six inches from the terminal ileum." No other evidence of intra-abdominal disease was found. Incision of the adhesion resulted in immediate ballooning of the cecum. Antibiotics and Wangensteen suction were used postoperatively.

Three days later the distention was not much reduced and no flatus was passed by rectum. "Therapeutic" spinal anesthesia was induced, but with little effect. On x-ray examination with barium enema the following day no colonic lesion was noted. The Miller-Abbott tube had extended to the distal ileum (Figure 2). Temperature, pulse and respirations remained essentially normal. Flatus was passed and there was diminution of distention. Fluids were given by mouth and the suction tube was clamped.

After the patient had been on full diet for 48 hours and bowel movements were normal, intestinal suction was considered no longer necessary. An intern, fearing retrograde intussusception, felt it was best to remove the tube through the anus. The metal adaptor was detached and the tube was permitted to progress down the pharynx. Five days later, despite persistent normal bowel movements, there was no evidence of descent of the tube. In an x-ray film, the entire Miller-Abbott tube was observed to be tightly coiled in the ileum (Figure 3).

Although there was slight abdominal distention with some discomfort, bowel movements and the temperature and pulse

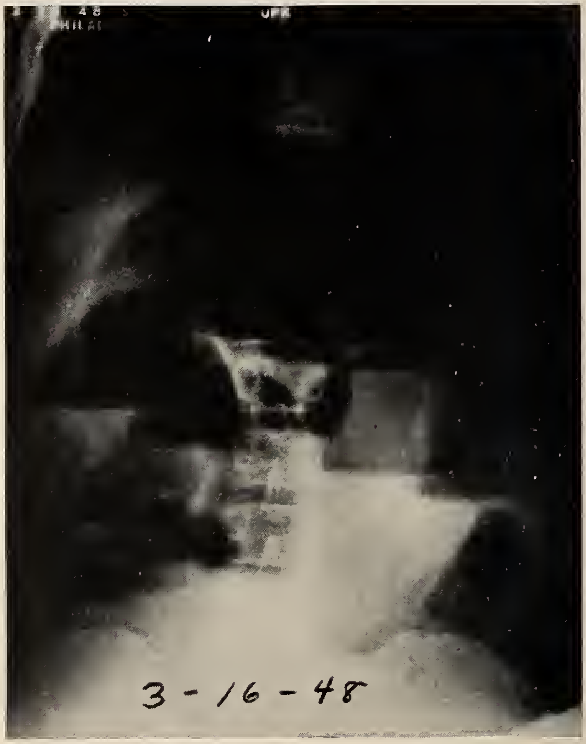

Figure 1.—Mechanical obstruction of small bowel.

and respiration rate continued to be normal. After x-ray study two days later, it was reported "the large loop of the tube appears to be open wider than on previous study. The head of the tubing appears to be extended further into the intestinal tract. It is possible that it is now uncoiling itself and starting through the intestines." (Figure 4.) The surgical opinion, however, was that the tube was tangled and that there was no evidence of progression. Accordingly, 13

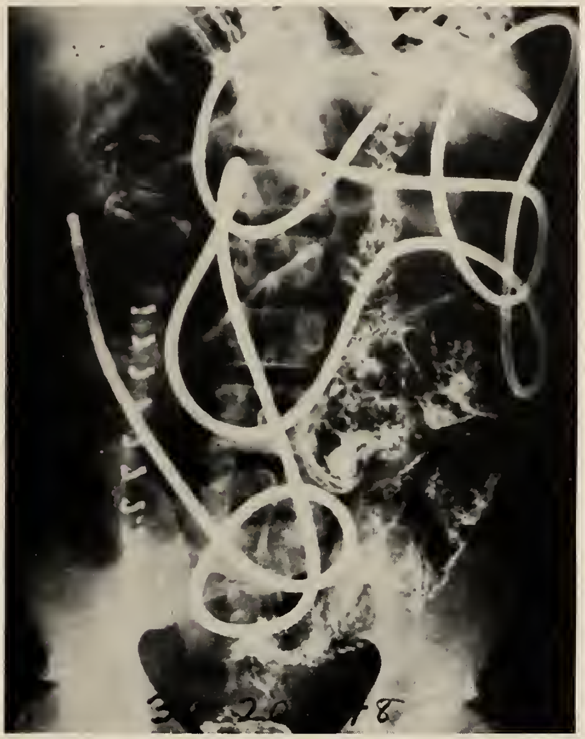

Figure 2.—Miller-Abbott tube progressing normally down the small intestines.

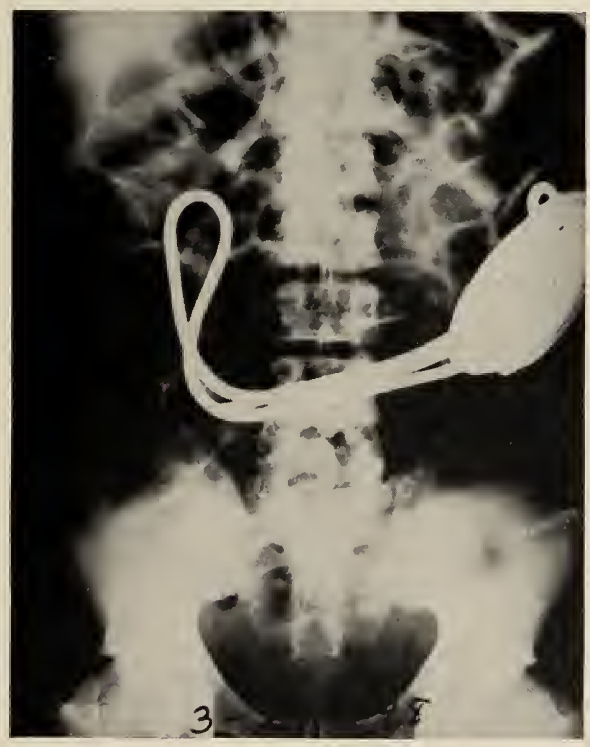

Figure 3.—Suction tube tightly coiled in ileum.

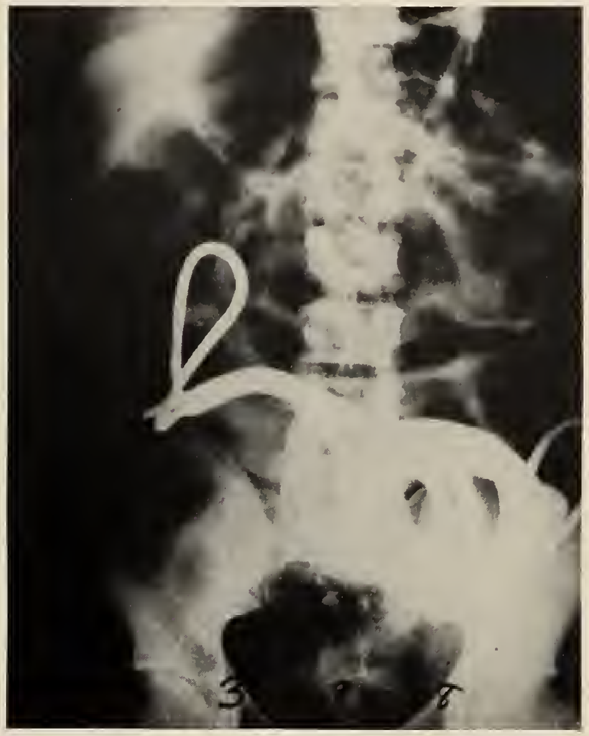

Figure 4.—Miller-Abbott tube remains knotted two days later.

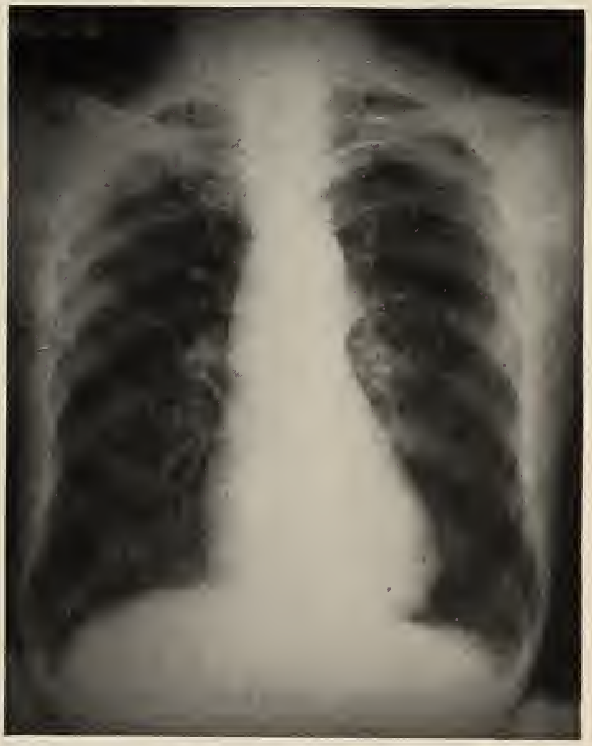

Figure 5.—Note the mercury particles, particularly in the right lower lobe. (Courtesy of J. Sugarman.)

days after the previous operation, the patient was operated upon again. A mass "approximately the size of an orange" was located 12 to 14 inches proximal to the ileocecal valve. The ileum at the site was incised on the anti-mesenteric surface, the coiled rubber tubing making up the mass was delivered in segments, and the bowel was closed.

Aside from a mild febrile reaction postoperatively, and moderate distention which responded to further intubation, the patient's subsequent course was uneventful. He was discharged from the hospital in good condition.

Case 2.—Figure 5 is an x-ray film of the chest of a patient with intestinal obstruction (by permission of J. Sugarman). In this case, rupture of the mercury-filled intubation bag caused tracheal aspiration, with the majority of the mercury coming to rest in the right lower lobe. No serious residual effect was noted in four years of observation, however.

Certainly routine intestinal intubation, while not fraught with danger, has on occasion caused complications that made further treatment necessary. It would appear advantageous, therefore, to instruct members of the house staff in the management of intestinal tubes, and to make them cognizant of the many possible dangers attendant upon their use. A classified list of complications of intubation follows:

1. *Mechanical*
   - A. Balloon: (1) rupture, (2) over-distention.
   - B. Tube: (1) leaking, (2) kinking or knotting, (3) occlusion.
   - C. Adapters: (1) inaccurate fit, (2) errors due to labeling.
2. *Anatomical*
   - A. Respiratory Tract: (1) edema of turbinates, (2) epistaxis, (3) sinusitis, (4) eustachian inflammation, (5) otitis media, (6) laryngeal edema, (7) pneumonitis.
   - B. Gastrointestinal Tract: (1) pharyngitis, (2) esophageal erosion and stricture, (3) gastric erosion and perforation and hemorrhage, (4) intestinal erosion and perforation, (5) intussusception.

Rupture of the balloon with release of mercury or barium have both been reported without ill effect.[3, 7] Recently, too, the author observed a case of postoperative ileus in which mechanical obstruction was caused by overdistention of a Miller-Abbott tube bag with an excess of mercury. Similar complications caused by absorption of an excess of carbon dioxide by the bag within the intestinal tract have been reported.

The difficulties encountered with tubing may be kept to a minimum by discarding old tubes, and by frequent roentgenologic observation of the position of the tube in the patient. Brenizer[2] emphasized that tight coiling in storage may predispose to knotting. Occlusion of the tube by intestinal contents, a frequent complication, can be corrected by repeated irrigations.

Wyatt and Chisholm reported a case of intestinal obstruction caused by injection of Varco's solution into the wrong lumen. The patient died following a period of intestinal obstruction. They suggest the Honor tube in preference to the phalanged ends of the Miller-Abbott tube in order to avert such an error.

The respiratory complications of intubation are well known to surgeons. "Plugged nose" owing to swelling of the turbinates, epistaxis caused by erosion, and infection and edema owing to an encrusted tube's remaining too long in place, are not uncommon. Tracheotomy has been reported necessary in some instances.[4] In the main, these complications can be avoided by limiting the period of intubation, by occasionally injecting oil through the nostrils, and by inserting fresh tubes when intubation over long periods is necessary.

Vinson[6] reported esophageal stricture formation and Mahon[5] reported a case in which the tube caused gastric mucosal erosion and perforation with subsequent peritonitis. Prolonged presence of a Miller-Abbott tube in the small intestine has likewise been known to cause ulceration and perforation there.[1] Harris[3] reported intussusception accompanying overdistention of the balloon. The possibility of retrograde intussusception following too rapid withdrawal is well recognized by physicians who are familiar with the use of double lumen tubes. Frequent roentgenologic observation and avoidance of prolonged periods of intubation without change of tubes would appreciably decrease the number of such complications.

Prophylaxis is the best defense against complications. A resume of the salient prophylactic features follows: Check the balloon before insertion; use fresh tubing, not tightly coiled; flush the balloon with carbon dioxide; examine adapters and instruct hospital personnel; avoid prolonged intubation; insert oil in nostrils frequently; irrigate tube frequently; change tubing when used over extended periods; secure the proximal end of the tube unless the distal end has entered the cecum.

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CASE REPORTS

- **Relapsing Fever Probably Caused by Borrelia Duttonii**
- **Anuria Owing to Urethral Obstruction by Sulfadiazine Crystals**
- **Aneurysm of the Abdominal Aorta with Rupture into the Duodenum**

Relapsing Fever Probably Caused by Borrelia Duttonii

MORRILL L. ILSLEY, M.D., *Claremont*

UP TO THE TIME of the case herein reported, the health officer for the southeast district of the Los Angeles County Health Department had had no reports of relapsing fever in the district since a physician in La Verne reported a case more than five years ago, although it is suspected that many persons had the disease in the interim and it was not recognized. The number of cases reported to the California State Department of Public Health in the five years 1945-49 averaged ten a year.[1]

REPORT OF A CASE

A white male college student 22 years of age had had intermittent chills and fever for 23 days when first observed September 24, 1951. He had been well until September 3, when, while at Big Bear Lake after twelve days on a camping trip, chills and fever developed suddenly and lasted a day and a night. At the same time the patient had headache, anorexia, vague abdominal pain, slight stiffness of the joints and a feeling of tightness in the chest. During the next week he felt well except for lassitude. Eight days after the onset, a second bout, which lasted three days, occurred. The temperature was 101 degrees F. and there was profuse sweating. Then again the patient was free of symptoms except for lassitude and loss of ten pounds in weight. Chills and fever recurred September 17 and lasted two days. A fourth attack, during which the patient vomited once, occurred September 24 and medical advice was sought.

Upon physical examination the patient appeared to be acutely ill. The tongue was coated. A few fine rales were heard in the hilar region of the chest. The abdomen was tympanitic, the spleen enlarged but not tender. In roentgen films the heart, lungs and mediastinum appeared to be normal.

The hemoglobin content of the blood was 15 gm. per 100 cc. and erythrocytes numbered 4,960,000 per cu. mm. The color index was 1.04. Leukocytes numbered 9,450—20 per cent lymphocytes, 8 per cent monocytes, 54 per cent segmented neutrophils, 17 per cent non-segmented neutrophils, and 1 per cent eosinophils. In bacteriological examination of the blood, no plasmodia were observed but many Borrelia spirochetes, probably Borrelia duttonii were present (Figure 1). Results of agglutination tests were negative for typhoid, paratyphoid and brucellosis. No organisms grew on a culture of the blood. The urine was not examined.

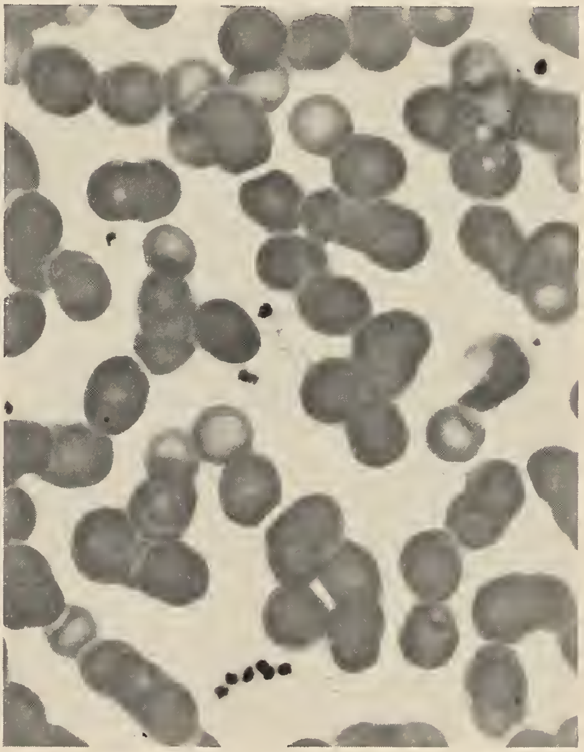

Figure 1.

Upon advice communicated from the clinic of Dr. Earle Moore at the Johns Hopkins University School of Medicine and Dr. T. B. Turner of the School of Hygiene and Public Health of the same university, the patient was given penicillin, 1,000,000 units daily for the first week, 600,000 units daily for the second week, and 300,000 units a day for the next five days. The fever abated soon after administration of penicillin was started, and the patient had no further attacks.

Textbooks mention relapsing fever caused by Borrelia duttonii, but few reports of cases could be found in the literature. Wynn and Beck[2] in a study of data on 283 cases that had been reported to the California State Department of Public Health between 1921 and 1944, made the following observations: In a majority of cases infection occurred along the Sierra Nevada range at or above 5,000 feet, where O. hermsi was the vector. In other cases the disease was contracted at elevations between 250 and 4,500 feet, and in those cases O. parkerii was the vector. Rodent reservoirs (for example, chipmunks and tamarack squirrels) were proved in four cases—all over the 5,000-foot level. There was a seasonal pattern of occurrence of the disease. The peak months were June, July, August and September, a period following the emergence of rodents from hibernation, the opening of summer cabins, and influx of vacationists. However, there were some "out of season" cases in residents of endemic areas and it was conjectured that a disease colloquially called "squirrel fever" might be relapsing fever. The disease may be confused with brucellosis, malaria, pyelitis, influenza, typhoid, typhus, and sunstroke. It is characterized by sudden onset with fever, frontal headache, pain in the back, the limbs, and the joints, and pronounced prostration. Nausea and vomiting may occur. In a few instances in the California series, a rash was noted. The attacks usually last two to four days and the symptoms usually recur within three to twelve days. During the afebrile period, the patient feels entirely well. If no treatment is given, there may be as many as twelve relapses. In the majority of cases in the California series the patient had two to four attacks, a few as many as eight but each of decreasing severity. The infecting organism may be identified by either of two methods: microscopic examination of a smear of the blood, or animal inoculation. Smears should be prepared as thick or thin films of blood obtained at the peak of the attack before treatment is given. Wet preparations may be examined under the dark field if equipment is available.

SUMMARY

A patient who had several bouts of chills, fever with anorexia, headache and abdominal pain after a camping trip in a mountainous region of California was treated with penicillin after Borrelia spirochetes were noted in examination of the blood. The symptoms abated promptly and did not recur.

1111 Indian Hill Boulevard.

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Anuria Owing To Urethral Obstruction by Sulfadiazine Crystals

CARL L. BIORN, M.D., *Palo Alto*

ANURIA WITH OBSTRUCTION of the upper urinary tract has been reported on many occasions since the sulfonamide derivatives first came into general use.[1, 3-6] Anuria due to urethral obstruction secondary to sulfonamide therapy, however, while undoubtedly observed by other physicians, has not been as widely publicized. At the time the case herein reported was observed, the literature was reviewed and no report of anuria caused by crystalline obstruction of the urethra by a sulfonamide product was found. Later (in January, 1952) Dukes[2] cited four reports of cases in which lower urinary tract obstruction developed following treatment with sulfadiazine.

REPORT OF A CASE

The patient, a boy aged 4 years and 8 months, was referred by another physician on February 7, 1951, because he had been completely unable to void that day after awakening in the morning. (Later it was determined that he had not voided for eighteen hours.) The referring physician, treating the patient for infection of the upper respiratory tract, had prescribed sulfadiazine and a total of 4 gm. of the drug had been taken at the time he was observed by the author. Upon physical examination, dullness upon percussion of the suprapubic region of the abdomen, suggestive of elevation of the dome of the bladder, was noted. There was pronounced stenosis of the external urethral meatus, and a whitish substance suggestive of crystals of sulfonamide derivative exuded from the orifice. First with a probe and later with a small sound, the external urethral meatus was dilated slightly and the packed crystals were broken to some extent. Thereafter, a small red rubber catheter was passed into the bladder and approximately 200 cc. of clear urine drained freely. In the course of catheterization, a considerable quantity of whitish crystalline material was expressed from the urethra. A specimen of the urine obtained from the bladder and subjected to routine analysis was noted to be within normal limits except that the urinary sediment contained many crystals of a structure typical of sulfonamide crystals. No organisms grew on a culture of the urine in 48 hours. After the catheterization, meatotomy was performed and the patient was sent home with instructions to force fluids and to return in five days for dilatation of the external urethral meatus. When the patient returned, the mother reported that he had voided freely after the initial therapy in the office, and had had no difficulty since that time.

DISCUSSION

The case reported illustrates one more complication to anticipate when prescribing sulfonamide therapy. Dukes said that one would expect this complication to occur more commonly in children than in adults because the diameter of the adult urethra is of sufficient size to permit the passage of the precipitated crystals, thus precluding obstruction. The patient in the case here reported had stenosis of the external urethral meatus, but whether this was a significant factor in causing urethral obstruction is unknown. However, it seems logical that any organic obstruction would tend to cause precipitation of the crystalline material and blockage of the urethral passageway. Dukes made no mention of stenosis of the external urethral meatus in the four patients that he reported upon.

The diagnosis was established easily in the present case because the patient was known to have been given sulfadiazine. Also, when the catheter was passed into the bladder, a satisfactory quantity of urine was obtained. This was at least enough to indicate that the patient had very little, if any, upper urinary tract obstruction. There did not appear to be any evidence of toxic nephrosis in the patient in the present case or in the patients reported upon by Dukes.

The treatment, namely stopping the drug, catheterization, meatotomy and forcing fluids by mouth, relieved the patient at once. Other measures, suggested by Dukes are alkalization of the urine and hot sitz baths. Dukes also mentioned that, if these measures fail, removal of the granular material by urethroscopic means under general anesthetic may become necessary.

The prognosis for complete recovery from this complication seems excellent. In all cases reported, the patients recovered promptly and without any known sequelae. Apparently the occurrence of this complication need not preclude further sulfonamide therapy. The patient in the present case

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Presented before the Section on Pediatrics at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

received comparable dosages of sulfadiazine on two occasions after recovery from the urethral obstruction, without urinary complications.

SUMMARY

A case history of a child with urethral obstruction and anuria due to sulfadiazine crystals is presented. Stenosis of the external urethral meatus which was present in this case may have contributed to the blockage by narrowing the urethral channel. Treatment which consisted of discontinuing the drug, catheterization, meatotomy and forcing fluids by mouth, resulted in prompt recovery.

300 Homer Avenue.

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Aneurysm of the Abdominal Aorta with Rupture into the Duodenum

ALBERT E. HIRST, Jr., M.D., ***Riverside,*** **and**
ARNOLD W. ABBOTT, M.D., ***Ontario***

RUPTURE OF AN ANEURYSM into the gastrointestinal tract is rare. Hunt and Weller[2] who reported a case in 1946 found reports of only 40 cases in the literature. In 33 cases the rupture was into the duodenum. By 1951, 43 such cases had been reported.[1] The following is a report of an additional case.

REPORT OF A CASE

A 72-year-old white male one morning vomited a large amount of bright red blood after nausea and generalized abdominal distention of one week's duration. When examined about 15 minutes later the patient was in a state of shock. The systolic blood pressure was 110 mm. of mercury and diastolic pressure could not be measured. The patient refused hospitalization and was placed on a regimen of milk and Amphojel® every two hours. Tarry stools were passed. In the evening the blood pressure became stabilized at 130 mm. systolic and 80 mm. diastolic. During the night several large tarry stools were passed and the patient vomited a material having the appearance of coffee grounds. The next morning the patient collapsed in the bathroom and was taken to the hospital where he was admitted in a state of shock. Twenty years previously a diagnosis of peptic ulcer had been made following an episode of hematemesis. In the interim the patient had been in good health.

Upon physical examination, diffuse epigastric tenderness was noted, but there were no palpable abdominal masses or organs. The hemoglobin content of the blood was 10.5 gm. per 100 cc. Erythrocytes numbered 3.2 million per cu. mm. and leukocytes were 14,250—92 per cent polymorphonuclears, 6 per cent lymphocytes and 2 per cent monocytes.

Hematemesis and melena continued, necessitating four transfusions. Three days after admittance to the hospital the patient had sudden pain in the left side of the chest. Dyspnea and cyanosis developed and the patient died.

At autopsy the heart was observed to be of normal size; it weighed 350 gm. There was only minimal arteriosclerosis of the coronary arteries. A few pinpoint sized atheromatous plaques were present in the ascending aorta. There was moderate atherosclerosis of the abdominal aorta, with a saccular aneurysm containing a laminated thrombus situated just above the bifurcation. The aneurysmal sac was 3 cm. in diameter and 6 cm. in length and projected 3 cm. anteriorly. A probe was readily passed from the site of rupture in the anterior wall of the sac to a perforation in the duodenum (Figure 1). The perforation, which was 1 cm. in diameter, lay on the posterior aspect of the third portion of the duodenum, 2 cm. distal to the papilla of Vater (Figure 2). The stomach contained about 1,500 cc. of blood and clots. The

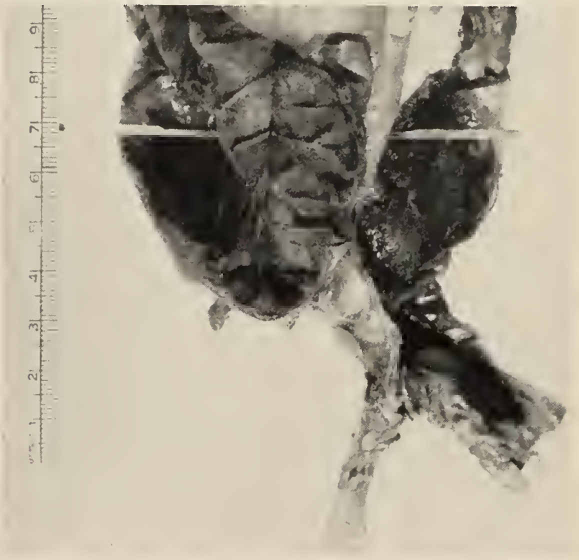

Figure 1.—A probe was passed from the site of rupture in the anterior wall of the sac to a perforation in the duodenum.

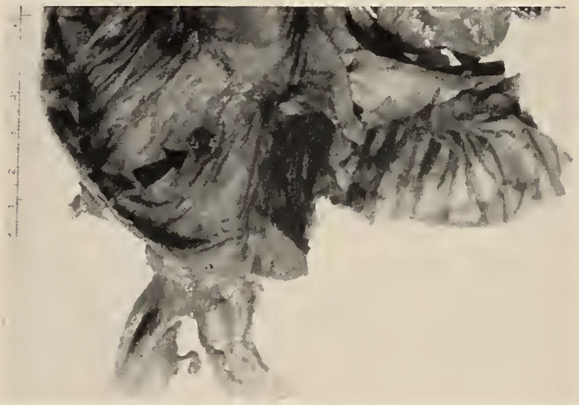

Figure 2.—Arrow points to perforation of the duodenum 2 cm. distal to the papilla of Vater.

proximal small bowel was filled with clotted blood. The colon contained tarry material. There was slight erosion of the anterior surfaces of the bodies of the third and fourth lumbar vertebrae.

In microscopic examination of sections taken at the level of the midthoracic aorta, intimal atheromatous deposits and atrophy of the media were observed. At the site of rupture, there was extensive hyalin change with loss of the smooth muscle and elastic tissue of the media; and a hyalinized thrombus was attached to the intima.

DISCUSSION

A correct clinical diagnosis was not made in the case here reported. The history of previous hematemesis due to peptic ulcer and the absence of a palpable abdominal mass indicated a clinical diagnosis of peptic ulcer. The terminal symptoms suggested coronary occlusion, but this diagnosis was not confirmed at autopsy.

With the inclusion of this case, there are 44 cases of abdominal aneurysm with rupture into the duodenum reported in the literature. In a previous report of eight cases observed in 16,633 autopsies,[1] it was noted that the lesion occurred in elderly persons; the average age in the eight cases was 72 years. Arteriosclerosis with or without hypertension was considered to be the most important cause of the lesion.

Rupture into the duodenum appears to be purely fortuitous, dependent on the proximity and fixation of the second and third portions of the duodenum to the lower abdominal aorta. Symptoms are usually of short duration, and pain is the usual initial manifestation. Melena and especially hematemesis are grave prognostic signs, suggesting a rapidly fatal outcome. A pulsating abdominal mass is usually present. Expansile pulsations are said to be highly suggestive of aneurysm,[4] and may be associated with a thrill or bruit over the mass. X-ray studies are frequently helpful in diagnosis.[3] Treatment is unsatisfactory and the prognosis is poor.

3024 Pine Street.

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California MEDICINE

EDITORIAL

PR—One Year Later

THE DESIGNATION "PR" has come more and more into medical usage in the past few years, to denote the public relations of the profession. Throughout the country, PR is becoming widely used and recognized, not as a symbol but as a program of the profession in achieving and publicizing its good deeds and eliminating its less fortunate incidents.

State medical journals, county society bulletins and national publications of the A.M.A. and other nationwide organizations are devoting important space to the programs and accomplishments of local, state and national groups in achieving "good performance, properly understood and adequately publicized."

The California Medical Association has long recognized the need of a high degree of performance in the field of public relations. Political and economic pressures, often based on misinformation, false premises or frankly political self-seeking have made the association extraordinarily alert to defend the position of medicine in this state by eliminating all possible causes of complaint by patients and by maintaining medical performance of the highest character. Only when these two functions are fully performed has medicine something to tell the public.

Just one year ago the C.M.A. set up its own public relations department. Staffed by a director and two associates, located in both northern and southern offices, this department has turned in its report for its first year of existence. The report makes excellent reading.

California's PR program was based initially on achieving two basic guarantees to the public. The first was the guarantee of the availability of the services of a doctor of medicine under any and all predictable circumstances. The second was the guarantee of recourse against real or fancied abuses of patients by physicians. Both guarantees revolve around proper organization of the county societies, a form of organization which permits the sharing of burdens which may be placed upon physicians under the guarantee of services and which demands of society members an objective attitude in seeing to it that a complaining patient is given a square deal and a chance to be heard.

From this starting point, and with the caution in mind that the best progress is made by taking one step at a time, the public relations department has concentrated its activities toward perfecting, through the county societies, the methods of carrying out a few basic responsibilities which the public puts upon medicine. It has undertaken to explain to the public the distinctions between a doctor of medicine and the various other kinds of practitioners who deal with sick persons. It has helped to organize, and to publicize, the availability of physicians at all hours through well-planned medical society emergency telephone services. And it has arranged for the broadcast of radio programs which give further

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For information on preparation of manuscript, see advertising page 2

evidence of the high quality of training and service of California doctors of medicine.

Newspaper advertising copy headed "Your M.D." has appeared over the name of the appropriate county medical society in 716 newspapers circulated in all counties in California. These societies serve about 82 per cent of the total population of California.

Radio programs, each consisting of a 13-week series, have been scheduled on 91 radio stations in California as public service programs. The stations cover practically all of the state's population.

Emergency telephone service is now established in 31 of the 40 county societies of the state, representing better than 93 per cent of the C.M.A. membership and a like percentage of the general population.

These accomplishments, made possible only through the active work and cooperation of the county societies, are easily listed as statistics. Much more difficult is the task of making them work and of ironing out the many rough spots encountered in every instance. The department's staff has found its job to be at least a full-time chore. Travel, meetings, conferences and the insistent demand for perfection in detail have made extraordinary demands on the time and talents of the staff members. To their credit, they have discharged their obligations with an unusually high sense of integrity and with great capability.

The true measure of accomplishment in this, a field in which results admittedly are intangible, is the general response on the part of publishers, radio and television operators and others whose daily business is to report to the public and, directly or indirectly, to mould public opinion. By this measure, the C.M.A. performance gives every indication of meriting high praise. A recent example came in the case of a newspaper publisher who was happy to receive the true facts and to report them to his readers after a young man had secured considerable notoriety by offering to sell his eyes to secure funds to care for his mother, who had cancer. Through a member of the C.M.A. staff, the county society and a hospital, assurance was given the publisher that the mother could obtain needed care, regardless of her financial position, and the publisher was quick to give his readers this fact.

The pleasure of reporting good accomplishments is often mitigated by the realization that much more remains to be done. Thus, in honesty, the C.M.A. public relations department recognizes that its job is but fairly begun. Much remains to be done and many items will be added to the program, in orderly fashion, in the coming years. However, much groundwork has been done which will need little or no repetition. A higher sense of responsibility than they had before has been instilled into some county societies and some members. A good portion of the public has been favorably impressed with the desire of the medical profession to do a good job, professionally, ethically and economically. With this background, we can look to the future with more optimism than we have had in the past and with confidence in attaining the goal of "good performance, properly understood and adequately publicized."

LETTERS to the Editor . . .

Psychosomatic Kidney Stones

Butt and Hauser[1] of Butt-Douglas Medical Foundation, Pensacola, Florida, report detailed physiochemical studies of the urines of 680 individuals of different ethnic groups in Florida and islands of the Pacific. They found a correlation between the presence or absence of hydrophilic colloids in these urines and the tendency of patients to develop kidney stones. In the absence of such colloids kidney stones are relatively frequent, while stones rarely form in the presence of protective urinary colloids.

Therapeutic test of this conclusion was made on a patient with multiple bilateral rapidly forming recurrent kidney stones. The urine of this patient showed numerous microscopic crystals. One hour after subcutaneous injection of 300 TR-units of hyaluronidase, his urine became free from crystals. Hyaluronidase therapy was therefore instituted in twenty similar cases and continued for a period of eleven to fifteen months. During this time eighteen of these patients remained free from recurrent urinary calculi.

As a collateral observation Butt and Hauser noted that "the formation of protective colloids in the human body virtually disappears during times of strong emotional stress," a conceivable basis for some future psychosomatic theory of kidney stones.

W. H. Manwaring, M.D.
Palo Alto

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California
MEDICAL ASSOCIATION

NOTICES & REPORTS

Executive Committee Minutes

Tentative Draft: Minutes of the 233rd Meeting of the Executive Committee of the California Medical Association, San Francisco, August 10, 1952.

The meeting was called to order by Chairman Lum in the Association offices, 450 Sutter Street, San Francisco, at 10:00 a.m., Sunday, August 10, 1952.

Roll Call:

Present were President Alesen, President-Elect Green, Council Chairman Shipman, Speaker Charnock, Auditing Committee Chairman Lum and Editor Wilbur. Absent for cause, Secretary Daniels.

Present by invitation during all or part of the meeting were Dr. Dwight H. Murray, legislative chairman; Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission; Dr. Lewis T. Bullock, chairman of the Committee on Psychology; Dr. Sam Sherman, representing the San Francisco Medical Society; Frank G. Dickinson, Ph.D., director of the Bureau of Medical Economic Research of the American Medical Association; Mr. Ben Read of the Public Health League of California, and Messrs. John Hunton, Ed Clancy and Robert L. Thomas of C.M.A. staff.

1. *American Medical Education Foundation:*

Discussion was held on the organization of members to solicit contributions to the American Medical Education Foundation. On motion duly made and seconded, it was voted to handle the solicitation through the county societies and the members of the Council and to appoint Dr. John W. Green chairman of a steering committee. Other members of this committee were selected as Councilors Bostick, Wheeler, Dau and West.

2. *Diagnostic Devices:*

The question of non-medical personnel using diagnostic devices was discussed and on motion duly made and seconded, it was voted to appoint a committee of the Council to consider this problem. Dr. J. Philip Sampson was named as chairman and Councilors Morrison and Ray as members.

3. *County Society Secretaries:*

On motion duly made and seconded, it was voted to appoint Councilor Morrison as chairman and Drs. A. E. Moore of San Diego and J. E. Young of Fresno as members of a committee to consider means of expressing appreciation to secretaries of the county societies for their valuable services.

4. *Woman's Auxiliary:*

On motion duly made and seconded, it was voted to appoint Drs. Sam J. McClendon and R. Stanley Kneeshaw as members of the advisory committee to the Woman's Auxiliary, to serve with the president, president-elect and secretary of the Association.

5. *A.M.A. Public Relations Institute:*

On motion duly made and seconded, it was voted to limit the Association's representation at the September public relations institute of the American Medical Association to the executive secretary and two public relations department representatives.

LEWIS A. ALESEN, M.D.	President
JOHN W. GREEN, M.D.	President-Elect
DONALD A. CHARNOCK, M.D.	Speaker
WILBUR BAILEY, M.D.	Vice-Speaker
SIDNEY J. SHIPMAN, M.D.	Council Chairman
ALBERT C. DANIELS, M.D.	Secretary-Treasurer
DONALD D. LUM, M.D.	Chairman, Executive Committee
DWIGHT L. WILBUR, M.D.	Editor
JOHN HUNTON General Office, 450 Sutter Street, San Francisco 8	Executive Secretary
ED CLANCY Southern California Office: 417 South Hill Street, Los Angeles 13 • Phone MAdison 8863	Director of Public Relations

6. *State Department of Public Health:*

(a) On motion duly made and seconded, it was voted to refer to the Committee on Public Health and Public Agencies an invitation from the State Department of Public Health to attend a conference on the problems of prematurity.

(b) Discussion was held on a conference planned for August 12 in Santa Barbara on the Crippled Children's Act. Dr. Harry E. Henderson and Mr. Ben Read were to attend the conference as Association representatives. On motion duly made and seconded, it was voted to meet with representatives of other organizations on similar problems.

7. *Public Policy and Legislation:*

(a) On motion duly made and seconded, it was voted to appoint Dr. Cullen Ward Irish as chairman and Drs. John B. Doyle, Edwin E. McNiel, Abram E. Bennett and Paul A. Gliebe as a committee to cooperate with state officials on problems affecting medical care. This committee may be assisted by advisory members to be selected by the Council.

(b) A complaint from a group of practical nurses on the regulations adopted by the Board of Vocational Nurse Examiners was considered and it was agreed to refer this to the committee appointed for this purpose, Dr. Howard Naffziger, chairman.

8. *Medical Services Commission:*

Dr. Shipman reviewed the meeting of the executive committee of the Medical Services Commission, which has scheduled its organization meeting for August 23-24. Dr. Sam Sherman and Frank G. Dickinson, Ph.D., discussed some of the problems to be presented to this commission.

9. *Committee on Psychology:*

Dr. Lewis T. Bullock reviewed the meetings held by his committee with representatives of other organizations and presented the draft of proposed legislation to provide for licensing clinical psychologists. It was agreed to invite Dr. Bullock to present this matter to the next meeting of the Council.

10. *President's Health Commission:*

Report was made that the President's Health Commission has scheduled a series of public hearings, one of which will be held in San Francisco on September 29, 1952. It was agreed that the Association should request permission for a representative to appear before this hearing.

11. *Los Angeles County Medical Association:*

A request from the Los Angeles County Medical Association for appointment of a referee to hear charges of unprofessional conduct brought against one of its members was received and, on motion duly made and seconded, it was voted to comply with this request, legal counsel to select the referee.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5 p.m.

Donald D. Lum, M.D., *Chairman*
Sidney J. Shipman, M.D., *Acting Secretary*

In Memoriam

Clement, Thomas G. Died in Healdsburg, March 26, 1952, aged 65, of coronary occlusion. Graduate of the University of Colorado School of Medicine, Denver, 1910. Licensed in California in 1947. Doctor Clement was a member of the Sonoma County Medical Society, the California Medical Association, and the American Medical Association.

✣

Collings, Clyde W. Died in Encino, July 4, 1952, aged 60, of coronary artery disease. Graduate of the University of Oregon Medical School, Portland, 1919. Licensed in California in 1939. Doctor Collings was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Graham, Harrington B. Died in San Francisco, July 20, 1952, aged 78. Graduate of the University of California Medical School, Berkeley-San Francisco, 1899. Licensed in California in 1899. Doctor Graham was a retired member of the San Francisco Medical Society, and the California Medical Association.

✣

Harris, Eva L. Died in San Francisco, July 9, 1952, aged 84. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1895. Licensed in California in 1895. Doctor Harris was a retired member of the Alameda-Contra Costa Medical Association, and the California Medical Association.

✣

Karshner, Rolla. Died in Los Angeles, July 12, 1952, aged 64. Graduate of the University of Michigan Medical School, Ann Arbor, 1917. Licensed in California in 1919. Doctor Karshner was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Musser, Fred C. Died in Los Angeles, July 1, 1952, aged 64, of coronary artery disease. Graduate of Wayne University College of Medicine, Detroit, 1915. Licensed in California in 1943. Doctor Musser was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Wilson, John W. Died in San Francisco, July 14, 1952, aged 86. Graduate of the State University of Iowa College of Homeopathic Medicine, Iowa City, 1894. Licensed in California 1895. Doctor Wilson was a retired member of the San Francisco Medical Society, and the California Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 24-27, 1953

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) not later than November 15, 1952.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1952. (No exhibit shown in 1952, and no individual who had an exhibit at the 1952 session, will be eligible until 1954.)

SCIENTIFIC PAPERS . . .

. . . SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy . . . . *Norman Shure*
6317 Wilshire Boulevard, Los Angeles 48

Anesthesiology . . . . *Joseph H. Failing*
475 Bueno Vista Street, San Marino 9

Dermatology and Syphilology . . . *Frances Keddie*
300 Homer Avenue, Palo Alto

Eye, Ear, Nose and Throat—

Eye . . . . *Alfred R. Robbins*
1930 Wilshire Boulevard, Los Angeles 5

ENT . . . . *Francis A. Sooy (Asst. Sec.)*
490 Post Street, San Francisco 2

General Medicine . . . . *William D. Evans*
10655 Riverside Drive, North Hollywood

General Practice . . . . *A. Bradford Carson*
1515 Fruitvale Avenue, Oakland 1

General Surgery . . . . *Arthur C. Pattison*
960 East Green Street, Pasadena

Industrial Medicine and Surgery . *Dan Kilroy (Asst. Sec.)*
3300 Third Avenue, Sacramento

Obstetrics and Gynecology . . . *Harold K. Marshall*
229 North Central Avenue, Glendale 3

Pathology and Bacteriology . . . . *A. R. Camero*
679 South Westlake Avenue, Los Angeles 5

Pediatrics . . . . *Clement J. Molony*
416 North Bedford Drive, Beverly Hills

Psychiatry and Neurology . . . . . *A. E. Bennett*
2000 Dwight Way, Berkeley 4

Public Health . . . . *Charles E. Smith*
U. C. School of Public Health, Berkeley 4

Radiology . . . . *Calvin L. Stewart*
2330 First Avenue, San Diego 1

Urology . . . . *James A. May*
2001 Fourth Avenue, San Diego 1

Q. & A. on C. P. S.

Question: What information should be obtained for a doctor's office records from a patient who presents a C.P.S. identification card?

Answer: Obtain the patient's full name, address, age, relationship (indicate whether a subscribing member or family member, because they may receive different benefits), C.P.S. group and member number, and ask patient to sign and verify income status. Other necessary and pertinent data are obtained from the contract code numbers appearing on the member's C.P.S. identification card.

Question: What steps should a C.P.S. physician follow when billing for services rendered for a procedure not specifically listed in the C.P.S. Fee Schedule?

Answer: When billing for an unlisted procedure, a written report of explanation should accompany the billing form and be addressed to the attention of the Medical Policy Committee. If this prescribed method is followed by the C.P.S. physician's office, the billing and report of explanation submitted will be especially handled for appropriate consideration to establish a fee comparable to a fee schedule item of closest similarity.

Question: Will C.P.S. make payments for services rendered by two physicians who are in attendance on the same case at the same time?

Answer: Only where it is warranted by the necessity of supplementary skills in cases of unusual complications or severity. Under such circumstances a written report of explanation will eliminate the need of further correspondence relating to the case. In this manner prompt payments will be assured.

Question: I have been requested several times to submit medical reports each month on my veteran patients. Is this reporting necessary?

Answer: An adequate medical report is necessary each month for several reasons. A veteran is eligible for treatment at government expense only for the condition or conditions for which he has been rated as service-connected. Adequate medical reporting is essential so that the authorizing official of the Veterans Administration can be sure that government funds are being spent in a legal manner. Conditions receiving treatment for which the veteran is not service-connected should be paid for by the veteran as a private patient. Physical findings are also important in order that the severity of the veteran's present condition may be evaluated by the Veterans Administration. These findings have a definite bearing on the amount and type of treatment which can be authorized. They also have a direct bearing on whether conditions adjunct to a service-connected condition will be covered at government expense.

Question: Are Korean veterans eligible for out-patient treatment under the Veterans Home Town Care Program?

Answer: A new directive received by C.P.S.-VA is designed to cut red tape and grant immediate out-patient medical care to Korean War veterans. One year (or more in cases of psychosis, tuberculosis, multiple sclerosis, etc.), immediately following the veteran's discharge, is designated as a "presumptive period" during which any medical disability arising is "deemed to have been the result" of the veteran's period of active service in the Armed Forces.

Immediately upon receipt of a claim from the veteran (Form 526), authority for treatment is issued on a prima facie basis to the physician of the veteran's choice, without waiting for approval of such claim by the Adjudication Boards.

Question: Why does C.P.S. require certain members to complete endorsements of service for pre-existing conditions, while in other cases this is not required?

Answer: Any member who applies for *group* membership when first eligible is not required to fill out these forms. However, underwriting experience clearly demonstrates that those persons who are "self-selected risks" (a person who did not enroll in C.P.S. at the time a group was first formed) should only be accepted subject to a statement of health, and exclusions of benefits for all preexisting conditions. This policy is sound from an underwriting standpoint, and serves the best interests of all C.P.S. members. In this manner, those members enrolling in C.P.S. when first eligible, who in most cases have no knowledge of their immediate need for services, will receive maximum protection.

Question: When a C.P.S. member leaves his place of employment and transfers to the Direct Payment Program, where the Two-Visit-Deductible coverage is no longer available, is the Medical-Care-While-Hospitalized contract considered a new contract?

Answer: If a member had Two-Visit-Deductible coverage under his group contract, and received maximum benefits under that contract for any condition, he would still be eligible for completely new benefits for the same condition, if he should take out Medical-Care-While-Hospitalized on the Direct Payment contract.

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Dr. L. A. Alesen, president of the California Medical Association, will act as moderator in a panel discussion on "The Physician's Public Relations" at the seventeenth alumni **postgraduate convention** of the Alumni Association of the College of Medical Evangelists Medical School, to be held in Los Angeles, March 8 to 13, 1953.

Dr. George W. Stephenson, assistant director of the American College of Surgeons, and specialists from the Johns Hopkins University Medical School, the Indiana University Medical School, and the Lahey Clinic in Boston are among other speakers. Designed for general practitioners, the meeting will include a varied program of lectures, panels, luncheon round-tables, refresher courses, exhibits and women's activities.

* * *

The 1952 **Scientific Assembly** of the California Academy of General Practice will be held November 9 to 12 at the Statler Hotel, Los Angeles.

* * *

Six outstanding guest speakers will participate in a two-day program of **symposia on pharmacology, hypertension and peripheral vascular disease** which is to be held October 15 and 16 at the Wilshire-Ebell Theatre under the sponsorship of the Los Angeles Heart Association. They are C. Sidney Burwell, M.D., research professor of clinical medicine, Harvard Medical School; Julius H. Comroe, Jr., M.D., professor of physiology and pharmacology, University of Pennsylvania Graduate School of Medicine, and professor of clinical physiology, University of Pennsylvania; Keith S. Grimson, M.D., professor of surgery, Duke University; Robert L. King, M.D., associate clinical professor of medicine, University of Washington School of Medicine; Harry Mandelbaum, M.D., associate in medicine, New York State University, College of Medicine; and M. L. Tainter, M.D., formerly professor of pharmacology, Stanford University, and now trustee of the Albany College of Pharmacy.

The program for the meeting follows:

WEDNESDAY MORNING, OCTOBER 15

SYMPOSIUM ON PHARMACOLOGY

In Memory of Morris H. Nathanson, M.D.

Gordon A. Alles, Ph.D., Moderator

9:30—Oral Diuretics in the Treatment of Congestive Failure—Sim P. Dimitroff, M.D., and M.C. Thorner, M.D.

9:45—Usage of Digitalis Glucosides—William Paul Thompson, M.D.

10:15—Physiopharmacologic Action of the Sympathomimetic Drugs, Maurice L. Tainter, M.D.

10:45—Physiopharmacologic Action of the Antihypertensive Drugs—Julius H. Comroe, M.D.

11:15—Use of Isotopes in Cardiovascular Disease States:

1. The Detection of Thyrotoxic Heart Disease—Franz K. Bauer, M.D.
2. The Treatment of Angina Pectoris and Congestive Heart Failure with Radioactive Iodine—Henry L. Jaffe, M.D., Maurice H. Rosenfeld, M.D., Frederick W. Pobirs, M.D., and Lawrence J. Stuppy, M.D.

Wednesday Afternoon

SYMPOSIUM ON HYPERTENSION

Harry Goldblatt, M.D., Moderator

1:30—The Natural History of Hypertension — C. Sidney Burwell, M.D.

2:15—Diagnostic Procedures in the Selection of Patients for Definitive Treatment of Arterial Hypertension — Keith S. Grimson, M.D.

2:35—The Role of the Adrenal in Essential Hypertension with an Evaluation of Adrenalectomy—Julius H. Comroe, M.D.

3:20—The Management of Essential Hypertension by Medical and Surgical Means—Keith S. Grimson, M.D.

4:05—Round Table on Hypertension—George C. Griffith, M.D., chairman; C. Sidney Burwell, M.D., Keith S. Grimson, M.D., Julius H. Comroe, M.D., Robert L. King, M.D., Maurice L. Tainter, M.D., and Harry Goldblatt, M.D.

THURSDAY MORNING, OCTOBER 16

SYMPOSIUM ON PROCEDURE

In Memory of Eugene B. Levine, M.D.

Edward Phillips, M.D., Moderator

9:30—The Clinical Value of Vectorcardiography—Stephen R. Elek, M.D., and B. J. Allenstein, M.D.

9:50—The Clinical Significance of Ballistocardiography—Harry Mandelbaum, M.D.

10:20—The Value of Cardiac Catheterization and Angiocardiography in Congenital Heart Disease—Sidney S. Sobin, M.D., Charles R. Baker, M.D., John L. Johnson, M.D., E. Levin, M.D., and Walter S. Thompson, M.D.

10:40—A Five-Year Study of Increasing Bacterial Resistance to the Antibiotics in Subacute Bacterial Endocarditis—David C. Levinson, M.D.

11:00—The Physiologic Aspects and Management of Heart Disease in Pregnancy—C. Sidney Burwell, M.D.

Thursday Afternoon

SYMPOSIUM ON PERIPHERAL VASCULAR DISEASE

William D. Evans, M.D., Moderator

1:30—The Clinical Evaluation of the Patient with Obliterative Arterial Disease of the Extremities—Ellen Brown, M.D.

2:00—The Place of Sympathectomy in the Treatment of Occlusive Arterial Disease of the Extremities—Lawrance N. Atlas, M.D.

2:30—Surgery of Large Arteries in Atherosclerotic Vascular Disease—Norman E. Freeman, M.D.

3:15—Emergency Treatment of Acute Vascular Occlusions:

1. Medical—Julius H. Comroe, M.D.
2. Surgical—C. J. Berne, M.D.

4:05—Round Table on Peripheral Vascular Disease—Travis Winsor, M.D., chairman; Ellen Brown, M.D., Lawrance N. Atlas, M.D., Norman E. Freeman, M.D., Julius H. Comroe, M.D., C. J. Berne, M.D., C. Sidney Burwell, M.D., and Robert L. King, M.D.

Two medical schools in Los Angeles have been granted funds by the National Cancer Institute **to aid studies on cancer control.** The University of California School of Medicine received $12,045 for a study of the ecology of cancer of the uterine cervix by Drs. Edward G. Jones and Ian Macdonald, and a grant of $10,000 was made to the University of California at Los Angeles for a program to develop better methods of cancer teaching in nursing schools which is to be supervised by Lulu K. Wolf, R.N.

MENDOCINO

Dr. Neely E. Bradford, formerly of Sonoma, recently was appointed medical director of the Mendocino County Hospital at Ukiah. He succeeds Dr. H. O. Cleland.

MONTEREY

Dr. Charles S. Herbert, chief of chest services at the Veterans Administration Hospital at Albuquerque, N. M., has been appointed medical superintendent of Monterey County Hospital. Dr. Herbert is to take over his new duties October 1. The hospital has been without a medical superintendent since Dr. John C. Sharp resigned the post last January.

SAN DIEGO

A symposium on heart disease, sponsored by the San Diego County Heart Association, will be held October 13 in the auditorium of the U. S. Naval Hospital in Balboa Park. The program will begin at 9:30 a.m. with an address by Dr. Lewis Bullock, president of the California Heart Association. Other speakers and their subjects: Dr. William Paul Thompson, Los Angeles, "Usage of Digitalis Glucosides"; Dr. C. Sidney Burwell, research professor of clinical medicine of Harvard Medical School, "The Physiological Aspects of Management of Heart Disease in Pregnancy"; Dr. Julius H. Comroe, Jr., professor of physiology and pharmacology, University of Pennsylvania Graduate School of Medicine, "Mode of Action of Drugs Currently Used in the Treatment of Hypertension"; Dr. Keith S. Grimson, professor of surgery, Duke University, "Surgical Management of Hypertension."

Dr. Burwell will also be the speaker at a dinner meeting to be held in the Manor Hotel, San Diego, beginning at 7:30 p.m.

SAN FRANCISCO

The **Florence Crittenton Home** of San Francisco, since 1889 a resource to physicians called upon to counsel unmarried expectant mothers regarding their problems and care, has just published a leaflet outlining its services and answering questions most frequently asked about the home's programs. The San Francisco home primarily serves women from Northern California communities, while a Crittenton Home at 234 East Avenue 33, Los Angeles, provides similar services in the Southern California area.

Any physician who wishes to become better acquainted with the San Francisco home may obtain a copy of the new leaflet by writing to the home, at 850 Broderick Street, San Francisco.

* * *

The San Francisco Heart Association's twenty-third annual **postgraduate symposium on heart disease** will be held October 22 to 24 in the Colonial Ballroom, St. Francis Hotel. The program follows:

WEDNESDAY MORNING, OCTOBER 22

COURSE IN ELECTROCARDIOGRAPHY

Presiding: Arthur Selzer, M.D.

9:00-9:30—Electrocardiographic Differential Diagnosis of Acute Myocardial Infarction—Malcolm Watts, M.D.

9:30-10:00—The Effect of Exercise Upon the Electrocardiogram—Herbert N. Hultgren, M.D.

10:00-10:55—Electrocardiographic-Pathological Conference. Panel: Francis L. Chamberlain, M.D., David A. Rytand, M.D., Hans H. Hecht, M.D., Robert L. Smith, M.D., and Maurice Sokolow, M.D.

10:55-11:10—Intermission.

11:10-12:05—Common Errors in the Interpretation of the Electrocardiogram—Hans H. Hecht, M.D.

Wednesday Afternoon

HEART DISEASE IN CHILDHOOD

Presiding: John A. Anderson, M.D.

1:30-2:20—Uses of Digitalis, a Panel Discussion. Moderator Harold H. Rosenblum, M.D.
Participants: Hans H. Hecht, M.D., Margaret Maroney, M.D., Lt. (j.g.) Irving Fine (MC) USNR, and Saul J. Robinson, M.D.

2:20-2:40—Certain Aspects of Electrocardiography in Infants and Children, Margaret Maroney, M.D.

2:40-3:15—Cardiovascular and Renal Adjustments in Polycythemic Subjects, Hans H. Hecht, M.D.

3:15-3:30—Intermission.

3:30-5:00—The "Total Child" with Rheumatic Fever, a Round Table Discussion. Moderator: John A. Anderson, M.D. Participants: pediatrician, Bruce Johnston, M.D.; cardiologist, Harold H. Rosenblum, M.D.; psychiatrist, Hale F. Shirley, M.D.; psychologist, Mrs. Elizabeth Bing; nurse, Mrs. Frances Parchman; medical social worker, Mrs. Hazel Studdard; group worker, Miss Carol Young; dietitian, Miss Jean Zumwalt; occupational therapist, Miss Carolyn Zumwalt.

THURSDAY MORNING, OCTOBER 23

Presiding: Richard McLaughlin, M.D.

9:00-9:30—Overtreatment of Congestive Heart Failure—David A. Rytand, M.D.

9:30-10:10—The Physiological Basis for Oxygen Therapy—Julius H. Comroe, Jr., M.D.

10:10-10:20—Intermission.

10:20-10:35—Physiological Aspects of Pericardial Effusion—Victor Richards, M.D.

10:35-11:00—Treatment of Acute Tuberculous Pericarditis—Forrest M. Willett, M.D.
The Surgical Treatment of Constrictive Pericarditis—C. Sidney Burwell, M.D.

Thursday Afternoon

Presiding: John J. Sampson, M.D.

1:30-2:30—The Heart in Pregnancy—C. Sidney Burwell, M.D.

2:30-3:15—Symposium on the Heart in Pregnancy, Moderator: John J. Sampson, M.D. Participants: Ralph Benson, M.D., Ellen Brown, M.D., C. Sidney Burwell, M.D., Robert W. Churchill, M.D., Charles McLennan, M.D., and Ernest Page, M.D.

3:15-3:30—Intermission.

3:30-4:00—Selection of Candidates for Mitral Valvulotomy—Herbert N. Hultgren, M.D.

4:00-5:00—Discussion of the Treatment of Hypertension, a Symposium—Francis L. Chamberlain, M.D., William J. Fleming, M.D., Maurice Sokolow, M.D., and Clarence M. Tinsley, M.D.

Thursday Evening

Annual Dinner Meeting, 7:00 p.m.

Medical Problems in Korea—Frank Gerbode, M.D.

FRIDAY MORNING, OCTOBER 24

SYMPOSIUM ON PERIPHERAL VASCULAR DISEASE

Chairman: Alfred F. Goggio, M.D.

9:00-9:30 — Surgical Treatment of Peripheral Vascular Obliterative Lesions—Edwin Jack Wylie, M.D.

9:30-10:00 — The Prognosis and Treatment of Necrotic Pedal Lesions—Rutherford S. Gilfillan, M.D.

10:00-10:10—Intermission.

10:10-11:00—A General Discussion of the Sympathetic Nervous System from the Physiological and Pharmacological Point of View—Julius H. Comroe, Jr., M.D.

11:00-12:00—Thromboembolic Disease, a Panel Discussion. Moderator: Ellen Brown, M.D. Participants: Paul Aggeler, M.D., Roy Cohn, M.D., Frank Leeds, M.D., Benson R. Roe, M.D., John J. Sampson, M.D., and Arthur Selzer, M.D.

Friday Afternoon

1:30-5:00 (at Laguna Honda Hospital)—Presentation of Patients with Various Types of Heart Disease. Presiding: J. Marion Read, M.D. Participants: Henry Brainerd, M.D., C. Sidney Burwell, M.D., Julius H. Comroe, M.D., Maurice Eliaser, Jr., M.D., Roberta Fenlon, M.D., Marlow B. Harrison, M.D., Hans H. Hecht, M.D., Hilliard J. Katz, M.D., J. H. Lewis, M.D., Lester S. Lipsitch, M.D., Clayton D. Mote, M.D., Charles A. Noble, Jr., M.D., Ernest S. Rogers, M.D., Arthur Selzer, M.D., Norman Sweet, M.D., and Clarence M. Tinsley, M.D.

GENERAL

The sixth annual **conference and annual meeting of members** of the California Division of the American Cancer Society will be held on October 3 and 4 at the Clift Hotel in San Francisco. The program follows:

OCTOBER 3

10:00 a.m.—Registration and Opening Session.
Address by Dr. Michael Shimkin, director of the Laboratory of Experimental Oncology, University of California—"The Nature of Cancer and Its Effect on the Human Being."

12:15—Luncheon.
Address—"Where the Cancer Dollar Goes."

2:00—Workshop sessions on special Cancer Society programs: county organization; techniques of lay education; the lay service program; fund-raising and Federation.

7:00—Annual Dinner Meeting.
Address—Dr. Charles Lund, Boston, president of the national American Cancer Society—"Contributions from Recent Cancer Research to the Detection and Treatment of Cancer."

OCTOBER 4

10:00—Annual Meeting of Members.

The California Division of the American Cancer Society cordially invites all the members of the California Medical Association to attend any or all of the meetings.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA AT LOS ANGELES SCHOOL OF MEDICINE

Progress in Medicine—Annual Evening Medical Lecture Series—Room 121, Business Administration and Economics Building (BAE), Los Angeles Campus (Westwood).

Date: September 22-December 8, 1952, 7:30-9:30 p.m., Monday evenings.

Fee: $50.00.

PROGRAM

September 22—What Is New in Endocrinology?—Peter H. Forsham, M.D., associate professor of medicine and pediatrics, director of Metabolic Research Unit, University of California, San Francisco.

September 29—The Treatment of Collagen Diseases—Joseph E. Giansiracusa, M.D., assistant professor of medicine, University of California, San Francisco.

October 6—Indication for Bone Marrow Examinations—William S. Adams, M.D., assistant professor of medicine, University of California, Los Angeles.

October 13—Diagnostic and Therapeutic Management of the Jaundiced Patient—Theodore L. Althausen, M.D., professor and chairman, Department of Medicine, University of California, San Francisco.

October 20—Diagnosis and Management of Hemorrhagic Disorders—William N. Valentine, M.D., associate professor of medicine, University of California, Los Angeles.

October 27—Diagnosis and Management of Fungus Infections—Victor D. Newcomer, M.D., assistant clinical professor of medicine, University of California, Los Angeles.

November 3—Cirrhosis of the Liver and Chronic Hepatitis—Rubin L. Gold, M.D., assistant clinical professor of medicine, University of California, San Francisco.

November 10—Heart Disease in Small Infants and Children—Forrest H. Adams, M.D., associate professor of pediatrics, University of California, Los Angeles.

November 17—Pain: Its Significance as a Symptom of Disease—Augustus S. Rose, M.D., associate professor of neurology, University of California, Los Angeles.

November 24—Recent Advances in the Use of Antibiotic Agents—William L. Hewitt, M.D., associate professor of medicine, University of California, Los Angeles.

December 1—The Acute Abdomen—Orville F. Grimes, M.D., assistant professor of surgery, University of California, San Francisco.

December 8—Use and Abuse of Gynecological Endocrine Therapy—Irregular Vaginal Bleeding—Edmund W. Overstreet, M.D., associate professor of obstetrics and gynecology, University of California, San Francisco.

Contact: Application or requests for information concerning this course should be made to Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24.

UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE

Medicine for General Practitioners—East Oakland Hospital, 2648 East Fourteenth Street, Oakland.

Date: September 23 through December 9, 1952. Tuesday Evening Lectures. Time: 8:00 p.m.

Fee: $50.00.

This course is approved by the California Academy of General Practice for 25 hours of postgraduate work.

Evening Lectures in Medicine—Mills Memorial Hospital, San Mateo.

Date: September 25 through December 11, 1952. Thursday Evening Lectures. Times: 8:00 to 10:00 p.m.

Fee: $50.00.

The first six lectures in this series have been prepared specifically for internists, and the balance of the lectures are intended for physicians who practice general medicine.

Contact: Stacy R. Mettier, M.D., Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Recent Advances in Internal Medicine—Course 842—San Diego County Medical Library, Room 1410, Medico-Dental Building, 233 A Street, San Diego 1.

Date: September 17 through December 10, 1952, 8:00-10:00 p.m., Wednesday Evenings.

Fee: $50.00.

Recent Advances in Diagnosis and Treatment—Course 843—Kern General Hospital Auditorium, Bakersfield.

Date: September 18 through December 18, 1952, 8:00-10:00 p.m., Thursday Evenings.

Contact: Gordon E. Goodhart, M.D., University of Southern California Medical Extension, Box 158, 1200 North State Street, Los Angeles 33.

INFORMATION

New Minimum Wage Orders for Women and Minors

(Prepared by the State of California Division of Industrial Welfare)

CALIFORNIA'S new minimum wage of 75 cents an hour for women and minors went into effect on August 1, 1952.

The revised rate is contained in new minimum wage orders recently enacted by the Industrial Welfare Commission. These orders enforced by the Division of Industrial Welfare of the Department of Industrial Relations regulate minimum wages, maximum hours and working conditions for women and minors in all industries in California except agriculture and domestic service in private households.

The new regulations applicable to women employed in professional offices are contained in Industrial Welfare Commission Order 4-52 covering women employed in professional, technical, clerical and similar occupations.

Some of the most important provisions of this order which will affect women employed in these establishments are:

1. The minimum wage is increased to 75 cents an hour; provision is made for a 60-cent rate which may be paid to limited numbers of minors and learners.

2. Women working in bona fide executive positions will be exempt from jurisdiction of the order if they receive $350 or more per month.

3. Employment of women and minors will be limited to six days, of eight hours each, per week with exceptions for short-hour workers. Previously, weekly hours were limited to a maximum of 48 hours without limit on the number of days.

4. The minimum time that may elapse between the end of the employee's work day and the beginning of the next day will be eleven hours; also, in the event that the employee's day involves a split shift, it will be required that the eight hours of work must be performed within a period of thirteen hours.

5. It is permissible to work more than eight hours a day and 48 hours a week in emergencies, provided that time and a half the regular rate of pay be paid for such overtime.

6. Accurate time records must be kept showing all starting and stopping time which must be recorded when it occurs; also total daily hours must be shown. Meal periods must be recorded unless the firm has an established meal period during which operations cease. Total hours worked during the payroll period and total wages paid shall be kept on the same record.

7. Each employee is entitled to rest periods in the ratio of ten minutes for each four hours of working time or major fraction thereof.

8. The applicable order must be posted in the establishment of each employer.

The Division of Industrial Welfare is mailing copies of the revised orders to all firms on its mailing list. Employers who do not receive copies or who wish extra copies should contact the division office nearest them. Offices of the division are located in San Francisco, Los Angeles, Oakland, Sacramento, Fresno, Long Beach and San Diego.

Student Activities at University of California School of Medicine

THE SCHOOL YEAR 1951-52 marked the beginnings of two new student organizations at the University of California School of Medicine. The Associated Students of the School of Medicine, the official student organization, represents all the students. The Student American Medical Association is a new national medical student organization which has chapters at about forty medical schools.

One of the first projects of the Associated Students (ASSM) was to establish an orientation program. During the summer a letter of welcome was sent to the incoming freshmen. During registration week the freshmen were met by a group of students from each of the classes, who gave them expert advice on all phases of medical school, from the very practical to the philosophical: purchases of books and equipment; the art of survival in medical school; extracurricular activities; a student's, or worm's eye, viewpoint on school in general; and a student's welcome into the medical fraternity. Similar orientation has also been extended to the sophomore and junior classes by the classes above them.

With the aid of faculty advisors an investigation was begun of hospitalization insurance for medical students during the summer when they are not covered by the student health plan, and for their families during the entire year. A student committee investigated many policies but found none that was suited to the particular needs. SAMA delegates to the convention of the California Medical Association last April told the Association of efforts in this regard and requested aid in the solution of the problem. Dr. H. Gordon MacLean, past president of C.M.A., is now attempting to secure a suitable policy. Along this same line, work was begun to establish a medical student emergency fund.

In the past, seniors have been unable to obtain adequate information about internships. In the belief that it would be of value to learn from interns their impressions of internship, a questionnaire was sent to all University of California School of Medicine graduates who were interning, as well as to a number of interns who had been graduated from other schools. A file of the replies, available to students, is expected to expand and to be of increasing value each year.

The Council of the ASSM was invited to meet with the steering committee of the faculty-student preceptorship program. Student opinions as to the successes and shortcomings of the program were requested. It was agreed that the ASSM should take some responsibility in promoting student activity in the preceptor program.

The SAMA held its second national convention in Chicago in December 1951. Delegates were present from 35 schools. The expenses of the California delegates were paid by the California Medical Association. Many items concerning medical students as a group were considered. The first issue of the *Journal* of the SAMA was released. This excellent journal, published nine times a year, contains articles of interest to students and to the profession in general; some are written by prominent men of medicine and some by medical students.

Two student delegates were invited to the C.M.A. convention in Los Angeles last April and there they learned much about the nature and workings of the C.M.A.

A number of other projects have been started: the interclass sale of used books, and plans for establishing book-sharing pools; a student lounge at San Francisco Hospital; a clarification of the hospital policy concerning the medical facilities available to students' families; the promotion of interest in the Alumni Association.

Of major concern was the problem of student-faculty relationships. At an informal meeting of all interested students and about a dozen members of the faculty, representative of all divisions of the school, there was general discussion of medical school problems from both the faculty and student viewpoints. It was discouraging, at times, to learn that present-day student problems are not too different from those existing in the student days of the faculty members. On the other hand, it was heartening that the faculty was cognizant of the problems and was already working toward solution of them. It was evident that such meetings, with free exchange of ideas, would be most effective in making medical school life more satisfying.

It was proposed by several members of the faculty at the meeting that students' suggestions regarding the teaching program would be of value to the curriculum committee and to the heads of divisions of the medical school. After the idea had been discussed with faculty advisors and with the division heads, a critique and evaluation was submitted.

Frederick J. Sobeck
Vice-President, SAMA
University of California School of Medicine
San Francisco

THE PHYSICIAN'S *Bookshelf*

MODERN ELECTROCARDIOGRAPHY — Volume I — The P-Q-R-S-T-U Complex. Eugene Lepeschkin, M.D., Assistant Professor of Experimental Medicine. The Williams and Wilkins Company, Baltimore, Md., 1951. 598 pages, $12.00.

In recent years so many new books on the electrocardiogram have appeared that another might appear to be repetitious and superfluous. Actually, this book is unique among modern text books on the electrocardiogram and will be of tremendous value to those who wish detailed and fundamental knowledge on this subject.

This first of two volumes covers the literature from 1934 until 1950 on the origin and form of the electrocardiogram and includes almost 10,000 references. The author has attempted to review and digest this tremendous body of information and at the same time inject his own views in controversial matters. In the opinion of the reviewer, he has been most successful in this attempt and has achieved his purpose of presenting a "comprehensive but concise summary of the progress of electrocardiography since 1933."

The nature of the book is such that it will be of greatest value to those who have some background of information and training in electrocardiography and who wish to gain further knowledge. As a reference text, it cannot be equalled by any modern publication in English, and should be included in the library of every investigator and practicing physician interested in the electrocardiogram.

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MEDICAL MILESTONES. Henry J. L. Marriott, M.D., The Williams and Wilkins Co., Baltimore, 1952. 293 pages. $3.50.

This is a readable single volume interpretation of the major medical advances of the past generation. It differs from much medical reporting in that it is neither too sensational nor hysterical. It calls attention to the drawbacks in some of the "miracles" as well as their accomplishments: for example, more time is spent in debunking the antihistaminics as "cold cures" than in telling of their full uses. There is a glossary of key technical words placed in attractive footnotes whenever such words are introduced.

The reviewer finds minor faults: Chapter five uses the proprietary term Chloromycetin throughout—without mention of the USP term chloramphenicol. In the table of contents terramycin is not mentioned although it is discussed equally with aureomycin in chapter seven. And although the author deplores "medical shrapnel" in the treatment of anemia, he condones it in the treatment of urinary infections.

On the whole, this book is a good, solid, well-balanced summary which the doctor may recommend to his patients and friends who desire to drink more deeply of the Pierian spring of medical knowledge. For that matter, the doctor himself may well read it to advantage!

RHEUMATIC DISEASES—Based on the Proceedings of the Seventh International Congress on Rheumatic Diseases. Prepared by the Committee on Publications of the American Rheumatism Association, Charles H. Slocumb, M.D., Chairman. W. B. Saunders Company, Philadelphia, 1952. 449 pages, $12.00.

The title "Rheumatic Diseases" is deceiving, for this volume is little more than the collected papers of the Seventh International Congress on Rheumatic Diseases, held in May, 1949. It is not a textbook of rheumatology, although advertisements (J.A.M.A. February 23, 1952) suggest that it would serve this purpose. The book is divided into chapters, but none of the sections is complete, although the discussion of fibrositis and psychogenic rheumatism is relatively lengthy. The section on the effect of cortisone and ACTH on rheumatoid arthritis and rheumatic fever by Hench et al is essentially the same material presented a month after the initial announcement of their work in April, 1949. Although reportedly brought up to date, there are only a few 1950 references in the bibliography and none after that year. However, there are authoritative papers on many phases of arthritis of importance primarily to rheumatologists, but also of interest to internists, physiatrists, orthopedists, pathologists and investigative workers in this field. The papers are too numerous to mention, but perusal of the table of contents would yield at least several articles of interest to most physicians.

There is a trend now toward publishing proceedings of meetings and freeing periodicals for more current publications. While this might be a worthwhile move, these collected papers presenting timely articles should not take three years to get into print if they are to retain much of their value. Further, they should be presented as proceedings or collected papers and not be confused with texts or well-rounded presentations of the material—a near impossibility with numerous contributors, despite careful editing.

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DISEASES OF THE NOSE, THROAT AND EAR—A Handbook for Students and Practitioners—Fifth Edition— I. Simson Hall, M.B., Ch.B., F.R.C.P.E., F.R.C.S.E., Surgeon to the Royal Infirmary, Edinburgh. The Williams and Wilkins Company, Baltimore, 1952. 463 pages, 8 colored plates, $4.00.

This volume is designed to meet the needs of the busy practitioner and the student.

The preface to the 5th edition written by the author takes up only half of a small page but is adequate. It informs one that this edition contains no radical change in size; but changes in treatment which have been proved and accepted and been introduced where appropriate, and that controversial matters have been avoided.

For those who are not acquainted with the preceding editions, this volume, although primarily set up for the medical student and the general practitioner, is a worthwhile addition to the otolaryngologist's library.

SURGICAL FORUM—Proceedings of the Forum Sessions 37th Clinical Congress of the American College of Surgeons, San Francisco, November, 1951. W. B. Saunders Company, Philadelphia, 1952. 667 pages, 290 figures. $10.00.

This is a book which represents the proceedings of the forum on fundamental surgical problems presented annually at the American College of Surgeons meetings. It, therefore, consists solely of reports on the experimental work that is being conducted the country over in the field of surgery.

It does not limit itself to any one surgical specialty, but covers research work and all surgical specialties. It is an excellent review of experimental work in the surgical centers of the United States. It will be valuable, therefore, to people interested in conducting research in their own hospitals. It is not of value to anyone wishing to acquaint himself with the latest developments in clinical surgery, except as these discussions can be transplanted on an experimental basis again to clinical problems.

It is recommended, therefore, to people interested in surgical research, but it is not the kind of book that the man who is interested in clinical surgery alone would profit by securing for his library. All of this work will appear sooner or later in one of the leading surgical journals. It reports the type of material that is seen in the leading surgical journals on experimental work but is about one year ahead of time.

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PRINCIPLES AND PRACTICE OF AVIATION MEDICINE—Third Edition—Harry G. Armstrong, M.D., F.A.C.P., The Surgeon General, United States Air Force. The Williams and Wilkins Company, Baltimore, 1952. 476 pages, $7.50.

This book is the standard text for flight surgeons for the armed forces, and as such the third edition has maintained its previous excellent qualities and over-all coverage of the field. There is no doubt that General Armstrong has wide experience in this field, and the text lives up to his impressive records.

It might be carping, but there are many suggestions for future editions as well as omissions which seriously detract from the value of this volume.

The order of the chapters leaves something to be desired. The chapters on Pilot Selection and Physical Examination of the Pilot precede the physiological problems of aviation medicine, and the chapter on Noxious Substances precedes the chapters on the Atmosphere, Altitude Sickness, and Oxygen in Aviation.

Numerous photographs of obsolete equipment which appeared in the previous edition are still maintained for little reason except, perhaps, for historical value.

A thorough chapter on respiratory physiology with more basic information and less application for equipment would be helpful. Similarly, the chapter on Speed and Acceleration elaborates on radial and rotary acceleration, at the expense of almost completely ignoring linear acceleration.

There is also no mention of the prone position as a possible method of ameliorating the effects of radial acceleration, and one-third of a page is devoted to the anti-blackout suit and one page to an obsolete crash helmet, while the newer work and developments by groups other than the Army are totally ignored. This exclusion of scientific work by groups other than the Army reaches almost embarrassing proportions when the excellent basic studies by the Mayo Clinic group on aeroembolism and aeroemphysema are barely mentioned. The basic endeavors of the Navy research groups on the anti-blackout suit and on linear acceleration and crash protection do not appear. The excellent helmet research by the group at the University of Southern California is nowhere to be found. The fine work on equilibrium by Graybiel with the U. S. Navy is omitted. The account of parachuting is antiquated, and no mention of Starnes' phenomenal free fall of 30,000 feet in 1943 is made. Most of this and other pertinent material is now declassified and should be contained in such an authoritative text for completeness.

Discussions of gravitational and anti-gravitational problems, ionosphere, space travel, jet and rocket aircraft and associated medical problems would be of current and future value to the student of aviation medicine. The bibliography at the end of most chapters persists in quoting work previous to World War II. The index is meager—but four pages for 460 pages of text replete with technical terms. In general, not much new material appears in the third edition that was not present in either the first or the second edition. However, this would not be a serious deficiency for any but the expert in aviation medicine.

It is evident that much information is withheld because of obvious military security which has not as yet been released. General Armstrong is faced with the difficult task of choosing the most significant data from a rapidly advancing field, and he has done an admirable job.

This book is recommended highly to the student entering upon aviation medicine for a complete and well-oriented view of the subject.

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DYNAMIC PSYCHIATRY — Transvestism — Desire for Crippled Women—Volume Two. Louis S. London, M.D., Corinthian Publication, Inc., 114 East 32nd Street, New York 16, 1952. 129 pages, $2.50.

The subtitle of this book is "Transvestism—Desire for Crippled Women." The case described is considered of importance because of the patient's psychopathological interest in crippled women, dwarfs, freaks, cross-eyed, bearded women, and because the patient sometimes masqueraded as either a male or female cripple. Transvestism is defined as "a form of sexual deviation in which the person desires to play the role of the opposite sex by crossed dressing." Following a chapter on the anthropological and historical references of the subject, 50 psychobiographic fantasies drawn by the patient and described in his own words are presented. The third and final chapter is concerned with the presentation of the case history; description of dreams related to shoe fetishism and transvestism, and at the conclusion a short description of the psychodynamics of the problem. The interpretation is obviously psychoanalytically oriented and emphasizes the importance of the Oedipus complex, latent homosexuality, the castration complex, sado-masochism, exhibitionism, shoe fetishism, and transvestism. This little volume is essentially a case report and will be of interest primarily to sexologists and psychoanalysts.

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STUDIES IN MEDICINE — A Volume of Papers in Honor of Robert Wood Keeton. Charles C. Thomas, Publisher, Springfield, Ill., 1951. 396 pages. $8.50.

This volume is a "Festschrift" prepared by colleagues of Dr. Robert Wood Keeton to celebrate his career in academic medicine, on the occasion of his retirement from the chair of medicine at the University of Illinois.

The chapters consist of unrelated topics by the faculty of the University of Illinois and Northwestern, with a few articles from other sources. The titles vary from "The Art of Using Lantern Slides" by Thomas S. Jones, to "The Microdetermination of Lipids — The Synthesis of Labile Phosphorus Compounds of the Phospholipids by Reaction with Monobasic Sodium Phosphate" by A. B. Kendrick.

Those readers who are interested in noting some of the investigative work being done in Chicago will find this volume of interest.

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Medical Care and Public Health Services

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• Medical care applies to the individual, and public health to the community. One is the concentrated application of diagnosis and treatment for the life, the comfort of a patient, and includes guidance in health as for motherhood, infancy, childhood and old age.

Public health services, provided by the community through its local government and the local department of health, are concerned with the prevention of diseases of all kinds. Some are controlled by sanitary authority, but the majority of preventable diseases are dealt with by public health education.

It is not the function of the health department to treat the sick. The family physicians, the hospitals and dispensaries provide for medical care. Medical care of the sick and public health protection are two parallel activities to make use of medical science, one for treatment, the other for prevention of disease.

As THE SPEAKER at the annual Ether Day celebration at the Massachusetts General Hospital in October 1915, I first ventured to express a point of view upon preventive medicine and its dependence primarily upon personal services of the family physician which you now ask me to develop 37 years later on the other side of our continent which calls the Pacific Ocean its last frontier.

There remain today, I believe, still critical and effective, the same distinctions and definitions to determine the relative functional necessities and usefulness of medical care of patients and the services of the local health department to the community.

What I mean by medical care is that entire range of applied science and the arts of medical practice included in the three words, *diagnosis*, *treatment* and *prevention* of disease—that is, medical science and art applied to the individual, who is sick, or fears he may be sick or wishes to preserve his health.

I know of no more comprehensive duty or privilege than that of the physician called upon by family or individual to bring relief from the presence or fear of pain, suffering or disability to a person or household that seeks his skill and sympathy and offers every useful aid and collaboration.

This constitutes the substance of medical care. All skills and resources commanded by the physician are focused upon the one and unique person, his patient.

In spite of multiple births of identical offspring, we know that Nature never repeats. Biologically and genetically each of us is but one expression of an infinite variety of patterns of body, mind and emotions. Disease and its symptoms are at least equally varied. The aim of the physician is to recognize any deviation from the optimum of structure and function, to understand causes and results of the protean exhibits of disease, anxiety, despair, injuries of the

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Guest speaker's address: Presented before Second General Meeting at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

body and spirit of man, to relieve at least, cure if possible, and as promptly as may be to restore the ailing person to all the satisfactions of life of which he may still be capable, not forgetting to explain what the physician knows and the patient can understand of the preventable factors of his sickness to be avoided in the future.

Less often but fortunately with greatly increasing frequency the physician today is called upon to plan a way of healthy living for babe or mother or grandparent, to apply his knowledge of physiology rather than his pathological acumen. In entire absence of pains or aches in his patient, the doctor lives up to his name as teacher of the laws of right living, to offer a plan of health, to encourage not only the science but a philosophy of preventive medicine among his fellows, and promote a spirit of devotion to the truths of human biology in the hope that much disease will be by-passed and health be more often a continuous and happy experience.

This is medical care, curative and preventive, and personal in its application, whether provided through group or institution or agency, through services of the lone practitioner or by the assembled skills of several. The essence of this is the uniqueness, the personal quality of the need or demand for care and the individual characteristics of the professional attendance concentrated upon the one and only problem of instant importance, the better or continued health of a patient.

This it is that we as the medical profession are in full cry to preserve, to protect, to develop and make so nearly universally available as the servants and the served, time, circumstance, distance, transport and other resources permit. This is the medical care we believe to be best, or perhaps only possible, on the basis of mutually sought and offered services between the licensed practitioner of medicine as a free agent and the parent or child, workman or employer, rich or poor, who is in need of the doctor of his choice.

It seems to me improbable that any substitute for such personal medical care can be developed through the mechanism of civil or military government by the compulsion of laws, or in the presumed interest of economies or uniformity of distribution.

That we have not achieved such a medical service utopia nationwide is well known to all physicians, but we are further on the way than the most optimistic of us hoped a generation ago and there seems no doubt in popular opinion that some pattern can be offered which will hasten the goal and raise our sights to the very best medical care which we see here and there achieved chiefly through the obstetrician, the pediatrician, the internist and the general family physician.

In my opinion it has been in our country through the broadening superiority of medical care that most of the gains in life expectancy, increasing longevity and betterment of survival at every decade of life have been achieved.

Please hold this rather crude and hasty sketch of medical care in mind while we think through the meaning of public health services.

With emphasis on *public* we can best think of those sciences, educational disciplines, authorities under the law and popular informational services which can be made effective only by governmental agencies and voluntary organizations developed and authorized primarily for the prevention of disease and for demographic and social purposes rather than for the benefit of the sick individual.

If we subscribe to the wise and tolerant democracy of Abraham Lincoln, we can well recall his words of nearly a hundred years ago:

"The legitimate object of government is to do for a community of people whatever they need to have done but cannot do at all or cannot do as well for themselves in their separate and individual capacities. In all that the people can do as well for themselves the government ought not to interfere."

Would that some measure of this philosophy prevailed in Washington, D. C., today.

Permit me then to apply this simple and understandable criterion to the problem, the question, the discussion of the necessity for government to undertake the application of the sciences of preventive medicine.

The purpose of a public health service (and we shall for the moment consider only local jurisdictions within the structure of our sovereign states and not the field of national and international health organizations and functions) is to protect a community, a group of people, served by their own elected civil government, against the known preventable diseases, to control environmental factors for the safety and wholesomeness of life, and to provide leadership and authoritative direction in education of the people in any and all matters affecting their health. As Dr. Henry J. Bowditch of Boston wrote in 1876: "The study of the prevention of disease is the only branch of medical learning which the state can legitimately undertake. The practice of medicine and surgery and the appropriate use of drugs must be left to medical schools and to private practitioners of medicine. The state, as a student of the causes of all diseases, only supplements, and indeed nobly supplements, them."

Public health services consist of the application of the sciences of preventive medicine under government or with its approval for social or community ends.

It is such services that have brought benefits of wide variety and deep importance to contemporary society and have made possible the amazing triumphs of productivity, of prosperity, of cultural and economic progress which we see about us. It is by using the resources of the community, of local government, of the authority of statute law and local ordinances to supplement the efforts of private medical practice that the public credit and popular esteem for public health officers and departments has been so commonly earned and well justified.

There is no gratitude comparable to that shown by the mother to her doctor for saving the life of her child. Something akin to this, but less often understood and declared, is the confident trustfulness of a community in the protection against pestilence, against sanitary hazards, and in the utterly unselfish timely warning of any preventable factor of environment, season or circumstance of employment given by the health officer to the people he serves.

BASIC FUNCTIONS OF A HEALTH DEPARTMENT

To a gathering of any physicians and especially to such as have shared in the promotion and development of the kind of local health services that reach 95 per cent and more of the people of California, it should not be necessary to elaborate upon the basic required functions of a local health department. Suffice it to remind you that each of the half dozen principal duties of a local health department has been so long and so widely tested as to usefulness, methods, costs and results that there can be no controversy as to their proper place among the functions of any jurisdiction of local government that presumes to represent universal suffrage and the taxpayers. These basic functions have been included within the scope of local government for a scant hundred years, while the sphere of the physician in medical care has been broadly comprehensive and consistent in its expansion for more than a thousand years.

Briefly let it be said that only those services are usually offered by or required of a local health department which can not be done by physician or patient in their private capacities or by an organized voluntary community resource, or have been assigned to some other more appropriate executive branch of local government. There are many instances where functions other than those essential for public health have been assigned to the local department of health. These may constitute a threat to the administrative integrity of the local health department.

Registration of births, notifiable diseases and deaths; isolation, quarantine, and in certain situations immunizations, and examination to discover unreported or unsuspected cases of communicable disease; public health laboratory services both optional and required, for diagnosis, analyses and epidemiological inquiry; sanitary supervision and enforcement of standards of cleanliness of persons, premises and processes, especially of perishable foods, and of the disposal of human and trade wastes, and the control of animal and insect vermin and pests and of the conditions of employees in industry and commerce—these four functions underly and express all the authoritative or compulsory functions of a local health department.

Two others of a quite different character and free from any taint of obligatory or law enforcing features have been of more recent origin (since 1912) and were at one time attacked by physicians. These are, here and there, still subject to local controversy as possibly an intrusion on the physician's province and an unwarranted invasion of the traditions of private family life and opinions.

Of these two functions of a modern local health department one is intended to bring an understanding and sound practice of maternity, infancy and child hygiene into every home where marriage, the prenatal state of an expectant mother, infancy, the preschool age, the school child through adolescence or into employment presents problems of social significance not commonly brought to the attention otherwise of the family physician. After some forty years of almost universal acceptance by physicians and local communities of the effectiveness and protective value of such maternal and child health services, as they are briefly called, it seems to me we may without cavil accept this educational effort in human biology as filling a permanent place in the public health picture and as basic for any intelligent and constructive plan to better the quality of the following generation and build bodies and minds and emotional maturity to meet the problems, the wear and tear, the trials, hopes and frustrations of the adult state.

The most lately developed of the building-stones of a sturdy structure of public health service is that of health education, the only other resource of a government agency to influence the people's manner of living besides the use of authority. The persuasive influence of teaching the truths of personal hygiene, both physical and mental, constantly increases while the police power, the strong-arm methods of sanitary ordinance and public health laws, is less and less resorted to.

These six functions of local health departments, four effective because of the weight of compulsion or force of law and two based on the enduring value of education in the principles of human biology, constitute the hard permanent core of a program for nationwide health without each of which no community can reap the best results of progress in the sciences of preventive medicine. These public services supplement and reenforce the influence and advice of the family physician and his specialist colleagues in the case of the individual sick patient or healthy person seeking guidance.

From this point onward and beyond into a broadening field of new projects of public concern, bordering on both medical care and public health, there are matters of principle and practice, fact and opinion to be considered.

If I am not mistaken, final and sound decisions in respect to some of these more recent interests will depend upon the definitions we agree upon and the differences of emphasis we give to at least three principal factors, namely individual versus collective facilities for medical care, education of both physicians and the community at large in the truths of human biology, and the assignment to the local health department of new duties perhaps equally or more appropriate for other departments of government.

At least the following fourteen objects of current public solicitude and professional concern are now either well established in the pattern of local health department functions or are being urged upon the health officer by influential and persuasive groups in his community that have very considerable funds to spend and have wide publicity and lay opinion to promote them.

1. Chronic sickness and disability in young and old.
2. Aging, its prevention and protection.
3. Rehabilitation of the physically and mentally handicapped.
4. Treatment of crippled and disabled children.
5. Rheumatic fever, prevention and management.
6. Cerebral palsy, prevention and reconditioning.
7. Multiple sclerosis, prevention and care.
8. Cancer, prevention, diagnosis, treatment.
9. Heart and circulatory diseases, prevention and care.
10. Mental health, guidance and protection.
11. Diabetes, detection and guidance.
12. Alcoholism, management of addicts.
13. Narcotic addiction, registration and control.
14. Infantile paralysis, treatment and rehabilitation.

Good administrative practice would seem to favor the concentration of all educational endeavors, which contribute to prevention and are not provided for the people in established educational institutions such as schools, colleges and universities, under the local department of health; institutional and custodial care of the sick and relief of indigency, dependency and delinquency under such agency as is already familiar with these necessary social duties, but certainly not the department of health; diagnosis and treatment of all variety of sick persons, other than those suffering from communicable or mental diseases, to be a function of medical practitioners or groups of them serving as at present in all variety of illness in their offices in general hospitals and in dispensaries. There is sound specialization in administrative medicine as in clinical medicine.

It is obviously of the first importance that any disease or group of aging, sick or disabled persons of sufficient number and condition to rouse public sympathy and active efforts is a proper subject for study, statistical, epidemiological, demographic and economic by the Department of Health of local, state or national government, to discover what if any are the preventable factors and how the knowledge of them may be put to work to reduce prevalence or disabling results or death from such diseases. Such studies do not require that the patients themselves be cared for by each local or state department of health, but can perhaps be best carried on by such institutions as are to be found in the National Institutes of Health. If we do not require constant concern with prevention by the Department of Health, we shall find the insistent demands of the sick diverting the slender professional resources of this department into directions for which health officers and their staffs were not trained and for which other physicians, nurses and medical institutions are much better qualified.

The care of the chronic sick and disabled, and of the aged, the rehabilitation of amputees and hemiplegics, the training of industrially crippled for reemployment, management of chronic heart and arterial disease, radiation and surgical therapy of cancer, orthopedic and other care of crippled, disabled, rheumatic and cardiac children, the alcoholic, the diabetic, the postpoliomyelitic paralytic, the cerebral palsy and multiple sclerosis patients all require the skills of the appropriate clinician and the assembled facilities of the general hospital, of the local community, region, base or university medical school areas as do other categories of the sick. The community hospital, *general* in fact as well as in name, is more appropriate as the agency for medical care than is the local health department.

It is for the health department to study the phenomena, the natural history of disease as it is expressed in groups of people because of some common factor possibly preventable. Then when anything is learned likely to be of value, the story should be told to the doctors and patients, the ways of prevention if any should be demonstrated or provided and the people be persuaded to make suitable provision for the care of those sick who need treatment in their homes or in appropriate institutions. The health department can well be, and generally is, the guiding community influence and can show the need and possibilities of remedy of preventable factors of disease and injuries without itself being charged with the operation of hospitals and dispensaries or with the care of the sick individual.

The field forces of the department of health are likely to be able to discover by routine visits to families and households, shops, schools and other occupied premises unsuspected cases of the disease under inquiry, whether of cancer, mental or occupational disease, diabetes or other disability. The organization of office and field personnel and equipment is certain to be needed and to be the major factor in systematic search for diseases of insidious development such as diabetes, cancer, and heart disease wherever the state of public opinion and medical cooperation make mass surveys acceptable and welcome. Few social and medical techniques have been so productive of knowledge of the amount, character and location of certain categories of diseases of nutrition, tumors, heart disease, tuberculosis and syphilis as have the systematic community and regional surveys made cooperatively by the medical profession and the health department.

SCREENING TESTS

The effort to screen a large part of the community by several routine production-line diagnostic or descriptive tests is but a passing phase of technological gadgeteering which leaves the patient uninformed and the physician to whom the report of findings is sent, forced to repeat most of the work with a history sheet in hand. As Dr. Wilson G. Smiley[5] so clearly stated in his address before the Southern Tuberculosis Association, September 10, 1951, "Multiple screening is inferior medicine, poor, slipshod, shortcut medicine and furthermore poor public health." However, there may be some promotional value in the so-called "multiphase screening" which will persuade many people to seek a really adequate health examination from their own physician who knows their performance in sickness and health and can give due consideration to the significance of minor deviations from normal.

It is well for physicians with a family practice to remember that the process of preventing large numbers of illnesses that used to call for much medical service has in all instances resulted in an increase in medical demand in other directions. The survival of a multitude of infants, young children and youth from the acute infections has at least trebled the proportion of people over 65 who need medical assistance throughout the lengthening years.

As I see it there is nothing in the prospect of local health services at all likely to reduce the demand for competent practitioners of medicine in increasing numbers everywhere except perhaps in the already oversupplied cities of the country. Every advance in preventive medicine adds to the opportunity of medical care by the family physician and ties the health department more closely to the ambitions of the community for social progress.

The deciding voice that will determine the future direction and character of medical care undertakings and public health services will be that of the consuming public, the people who demand the product which medical education and license to practice have entrusted to us as physicians.

The same consuming public through its elected officers of local government, city or county, agricultural or industrial will decide what services it will demand from and assign to the health officer and his organized team of associates, engineer, nurse, educator, dentist, veterinarian, laboratory and statistical technicians.

It is quite beyond all reason and more than improbable that any state legislature or the Congress will seriously consider legislation which would hamper local government in the free exercise of its established right to demand and support public health services of a nature and extent to satisfy its particular ambitions for protection against the hazards of preventable disease and the vicissitudes of illness for which we have neither preventive nor curative measures. No minority of citizens, medically educated or other, can prevent local government from determining its public functions.

We in this country have chosen a way of life of infinite variety and left the choice to the voice of the majority. It is quite distinctly the responsibility of the medical and associated professions to make clear to the public the scientific basis for the care of the sick and for health protective services. There is no greater danger facing our nation than a confusion and controversy of facts and opinions as to the best way to invest shrewdly and reap increasing dividends from the stock of knowledge accumulated by the sciences of preventive medicine and waiting to be implemented through the resources of individuals and society as a body. The progress of science will set at naught any plans or pressure for legislative limitation of the scope and functions of public preventive medicine.

There are a few and well tested social devices to bring common understanding as to the application of medical care and public health services, the methods, costs and results. It is time that we applied these to this unfinished business. The elements appear to me to be of three kinds, local government with its executive department of public health, community health councils representative of educated public opinion, and the local medical society with its membership organized to study local medical needs and resources for care of the sick and for public health. Comparable elements are desirable on a state basis.

Until there is substantial organization of public health departments at the local and state levels of government and a good variety of experiment and experience among them, the vague and mostly political platitudes offered as "national health plans" either by federal government spokesmen or by nationwide professional bodies are of no serious import and lack reality or competence. We have today no national plan for medical care or public health services worthy of the name, and are not likely to have any until we have applied ourselves successfully to the solution of some of the simpler problems of the home-town, the county, the state district, trade area or transportation centers of our country.

Instead of the potentially 150,000 local health jurisdictions in the 48 states, we need about 1,500 as the maximum. We have now about 1,200 authorized and mostly organized under full time trained medical officers of health. In six states all the population and area is included within such local health units. In ten more states 90 per cent or more of the population is so served; in seven additional states between 75 and 90 per cent of the population is served. And yet some 27 per cent of our people (approximately 40,000,000) live in communities lacking full time professionally qualified health direction and most of the basic health services. For less than 5 per cent of the people of the United States does the staff of the local health department meet the minimum desirable ratio of doctors, nurses and sanitarians in proportion to the population for good local health service.

There is a state health department in each state, in all but two instances committed to the policy of local health jurisdictions as the basis of total nationwide coverage.

In 33 states and 1,100 local jurisdictions there are representative health councils.

In all states and in most of the 3,070 counties there is an organized body of physicians.

If it were not for the duplicating and competitive construction of Veterans Administration hospitals and the reduction in the amount of federal grants to help the less favored local communities of our states to complete their respective programs of hospital building, we should now be almost abreast of the civilian need for general hospital beds. We need many more beds for the humane and competent care of the mentally ill. The margin between estimated desirable number of beds for tuberculous patients and those actually available grows steadily less and in another ten years we may well find that reduction in cases of this disease and improved methods of treatment in and out of hospitals, with shorter periods of necessary separation of such patients from their families, may at last close the gap and permit some diversion of beds in these hospitals to patients in other categories of long time illness such as arthritic, neurological and cardiac disease.

PERSONNEL SHORTAGES

Increase of the ratio of physicians to population is assured by the acceptance and graduation of more medical students than has been practicable before. If we are spared the calamity of war and the continued drain of physicians from civil life to meet the needs of the military establishment and for loan to countries and peoples far and wide around the globe who still lack the knowledge and skills our physicians are able to take to them, we shall in the foreseeable future be able to provide for what may be called the normal demands for personal and institutional medical care of an increasingly competent quality.

The most serious threat to good medical care particularly in hospitals is the continuing and distressing shortage of registered nurses. Remedies for this situation are being sought through changes of educational policies and replacement of the registered trained nurse in many hospital positions by the less well prepared practical nurse and nurse attendant, but an easy and early solution is not yet assured.

The picture of public health services is much less favorable because of the even greater shortage of physicians, nurses, sanitarians and health educators, the major factors being the demand for such trained personnel by the federal government, voluntary health agencies and industry, and the lower salary scale offered by local and state governments that find it difficult to recruit and hold physicians and nurses in civil service employment or subject to merit system qualifications in competition with the much higher earnings possible in the clinical branches of medicine and in federal service.

It is probable that all but the most sparsely settled and impoverished areas of our states would soon, within five years, be organized and operating their local health units if they could obtain the medical, nursing and other professional personnel necessary to do a good job of public health service. Inflation and the national defense preparedness effort have caused serious delays in the attempts of the past ten years to achieve total coverage of our population and area with adequately staffed, directed and financed local health departments.

The demands by organized society and local governments for the benefits of modern medical science cannot be denied. Whether we as physicians or patients wish it or not, we are inextricably involved in a revolution of human values in which the importance of the individual, the family, the social outlook of the community have assumed colossal proportions. The general public has been heavily oversold by many voluntary agencies with a disease hobby.

They want medical care for the sick, early, prompt, skilled, sympathetic and at a cost within collective resources through prepayment plans if not always by the individual patient's means at the time of the physician's service. The public wants its local government and its voluntary social resources welded into an instrument for the prevention of disease, the protection and promotion of health.

Our role as physicians is to know the needs and possibilities of service to the sick and the healthy as well as to recognize the quality of social pressures, sometimes misdirected and misled. We must be aware that we know more than we put to work of the causes and prevention of diseases, and we dare not underestimate the danger that the people in their haste and ignorance may take the management of medicine into their own hands to our profession's ultimate confusion, and to the public's loss.

As the hospitals and their outpatient departments and organized professional staffs and the office and home visits of physicians serve the sick and carry on a continuous process of *personal* preventive medicine, so the health department and its team of associated professions under medical leadership deal with preventable diseases *wholesale* and protect the mass of the community against hazards of personal contact, of environment, inheritance, occupation and the accidents of a complicated and strenuous life. The hospital and the health department are twin symbols of the community's concern with the application of the sciences of medicine to the comfort and safeguarding of the people, whose health is the only permanent wealth of nations.

Medical care, as I understand it, is the chief purpose of the physician sought by the sick and by the well for personal individual benefit. At best, it is a long continuing relationship through many years of observation with consecutive record of experience of the episodes of illness and of performance of the body, mind and emotions in health. Medical care calls for a variety of cooperative professional skills, for diagnosis, treatment and prevention of disease. Institutions and agencies devoted to medical care have grown great and given incalculable benefit to generations across our land without any dependence upon or administrative relationship with local health departments. Social evolution and demand may alter this pattern of medical care, but any radical change from the tested and trusted personal and direct responsibility between patient and physician, which has been productive of much of our national good fortune, should be subjected to competent examination before adoption.

Public health services to be effective do not need to include care of general sickness. Prevention of disease at wholesale through civil government by education and sanitary authority is the special distinctive function of local and state health departments. Only where the resources of the community must be enlisted to make preventive measures effective should a new public health function be added to the basic services everywhere recognized as necessary. Without the local health department, the structure of state and nationwide public health administration is likely to be wasteful and ineffective. Not primarily the *person* but the *community* benefits from local health services which will always be best when supplementing, not replacing or competing with the private physician.

There need be no rivalry between the medical profession and officers of public health except in the process of doing their respective jobs in the closest cooperation. Neither legislatures nor the courts will hinder the freedom of the physician to expand his conquest of sickness nor limit health departments in extending their duties to new realms of preventive and constructive public health if each of these partners in the sciences of medicine respects the other's superiority and special competence and the two together devote themselves without stint to the public interest.

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Cardiorespiratory Function

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• Accurate evaluation of the degree of impairment of pulmonary function in persons with fibrosis and emphysema requires: (1) ventilatory measurements from rapid spirogram tracings (vital capacity, maximal breathing capacity and the time required to blow the air from the lungs); (2) determination of the degree of bronchospasm present; (3) determination of the degree of pulmonary emphysema (residual air expressed quantitatively as percent of total lung volume); (4) determination of the arterial blood oxygen saturation at rest and immediately after step-up exercise; (5) measurement of the oxygen extraction from inspired air (per cent of oxygen removed) during rest and exercise; (6) determination of the oxygen up-take during exercise; and (7) observation of the duration of dyspnea after step-up exercise.

No single physiologic test is adequate in evaluating impairment of pulmonary function, and roentgenograms of the chest are unreliable as a sole basis for appraisal of disability.

In industrial medicine, pulmonary function studies make possible (a) more accurate diagnosis and evaluation of pulmonary disability; and (b) earlier detection and thus prevention of prolonged exposure by susceptible individuals to environmental hazards.

PULMONARY FUNCTION has been evaluated on a basis of the ability of the lungs to supply oxygen to and remove carbon dioxide from the blood during rest and exercise. In the large majority of cases of pulmonary disease with dyspnea the disability has been found due to fibrosis and emphysema. So great is the pulmonary reserve in man that clinical or roentgenologic detection of those conditions at an early stage is difficult. Physiologic tests of pulmonary function in addition to the clinical and roentgenological examination have been found necessary to appraise lung function accurately in the presence of fibrosis and emphysema. Physiological tests have been studied and analyzed with respect to the early detection of susceptible individuals to environmental hazards before serious stages of disability develop, for the early recognition and removal of such persons would greatly benefit both employees and industry.

The basic data for this discussion were obtained from a study of 500 miners of soft and hard coal who had fibrosis and emphysema and respiratory complaints. Physiological studies on such a large homogeneous group supply data from which a satisfactory evaluation can be made of the significance and limitations of the various physiological tests employed in pulmonary function measurements in man.

The measurements made were: Maximal breathing capacity[5] and vital capacity from spirogram tracings employing special apparatus (before and after treatment with a bronchodilator drug); residual air volume by the oxygen open circuit method;[1] arterial blood oxygen saturation both at rest and immediately after step-up exercise by the Van Slyke content and capacity method;[21] direct arterial pO_2 and pCO_2 determinations, by the Riley bubble method;[17] arterial pH at rest and after exercise; oxygen uptake and carbon dioxide output during rest and exercise from direct gas analysis of inspired and expired air;[6] per cent of oxygen extraction by the lungs from inspired air both during rest and exercise; and the duration of dyspnea after one minute of step-up exercise (30 steps on a stool 20 cm. high, in one minute).

Spirogram tracings of vital capacity and maximal breathing capacity, residual air volume measurements and exercise tolerance tests are the most important standardized tests of pulmonary function for clinical detection of fibrosis and emphysema. Bronchospasm plays a prominent role in chronic pulmonary disease and this aspect needs to be determined. Determination of arterial blood oxygen saturations and the percentage of oxygen extracted from the air breathed are frequently necessary for accurate evaluation. A mild exercise test is necessary, but not one designed as a measure of physical fitness. Spirogram tracings of ventilation measurements, which are easy to obtain with suitable apparatus, are most useful in screening tests, for abnormalities may be detected by this means long before roentgenologic changes appear.

On a basis of the physiological studies the 500 coal miners were classified into four groups as re-

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gards degree of impairment of pulmonary function —slight, moderate, advanced and far advanced.

A complete history, physical examination and radiological study supply important information for the clinical evaluation of impairment. However, such information frequently proves inadequate for an accurate determination of the extent of disability present and in some cases even fails to indicate the nature of the respiratory difficulty. In recent years the discrepancy between roentgenological studies and pulmonary function studies, in the appraisal of disability produced by silicosis in coal miners, has become well recognized in many parts of the world.[2, 3, 7, 8]

In the subjects of this study there was no apparent correlation between the roentgenographic stage of silicosis and the degree of impairment of pulmonary function (Table 1). Third stage silicosis existed in cases in which there was a slight degree of pulmonary function impairment, and advanced degrees of function impairment occurred in cases in which silicosis was only borderline or in the first stage. A lack of correlation of the roentgenographic stage of silicosis and the degree of pulmonary emphysema has been found in both hard[7] and soft[8] coal miners. Roentgenograms of the chest, although useful in diagnosing silicosis, should not be used as the only criteria in disability evaluation. The disease cannot be diagnosed on the basis of pulmonary function measurements alone, but the information available from these studies provides for more exact appraisal of the disability present than is possible by the usual clinical diagnostic procedures.

Pulmonary emphysema and chronic bronchitis are commonly regarded as the two factors producing disability in coal miner's silicosis. The presence and extent of pulmonary emphysema was accurately determined (duplicate checks of 100 cc. or less in all cases) in this study by measuring the residual air volume, using an improved oxygen open circuit method[1, 6] with a demand valve. The residual air volume was expressed as a percentage of the total lung volume (residual air plus vital capacity). This value expresses as a physiological relationship the effect of an increased volume of residual air on the mixing and dilution factor with respect to vital capacity and total lung volume. Thus it is immaterial whether the total lung volume is increased, decreased or remains unchanged, for the percentage value obtained represents the functional value of the pulmonary emphysema. The air remaining in the lungs after a forced expiration is termed residual air, and this normally occupies about 25 per cent of total lung volume.

The 500 cases in this study were classified according to the degree of pulmonary emphysema based

TABLE 1.—*Degree of Impairment of Pulmonary Function as Compared with Stage of Silicosis (Roentgenographically Determined) in 500 Coal Miners with Respiratory Complaints*

Degree of Impairment of Pulmonary Function	Group	Cases Studied		Roentgenologic Classification*									
				Normal		Borderline		First		Second		Third	
		No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Slight	1	82	16.4	1	1.23	10	12.20	15	18.29	27	32.92	29	35.36
Moderate	2	169	33.8	7	4.14	15	8.88	23	13.61	35	20.71	89	52.66
Advanced	3	170	34.0	3	1.77	10	5.88	20	11.76	23	13.53	114	67.06
Far advanced	4	79	15.8	0	0.00	2	2.53	13	16.46	17	21.52	47	59.49
Total		500	100.0	11	2.20	37	7.40	71	14.20	102	20.40	279	55.80

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* *Borderline,* increased peribronchial markings; *first stage,* slight fine mottling in parenchyma and increased size and density of hilar lymph nodes; *second stage,* typical nodular round and oblong shadows of soft even density from 2 to 6 mm. in diameter; *third stage,* shadows larger than 6 mm. in diameter and coalescence into aggregates.

TABLE 2.—*Degree of Pulmonary Emphysema (Data based on the residual air percentage of total lung volume in 500 coal miners with respiratory complaints)*

Degree of Emphysema	Classification by Groups	Residual Percentage of Total Lung Volume	Significant Clinically	Cases Studied		Roentgenologic Classification*									
						Normal		Borderline		First		Second		Third	
				No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
None	1	25 or less	No	38	7.6	1	9.09	6	16.22	3	4.23	13	12.75	15	5.38
Slight	2	25-35	No†	138	27.6	3	27.27	8	21.62	18	25.35	34	33.33	75	26.88
Moderate	3	35-45	Yes	165	33.0	6	54.55	13	35.13	17	23.94	23	22.55	106	37.99
Advanced	4	45-55	Yes	106	21.2	1	9.09	7	18.92	19	26.76	19	18.62	60	21.51
Far advanced	5	Above 55	Yes	53	10.6	0	0.00	3	8.11	14	19.72	13	12.75	23	8.24
Total				500	100.0	11	....	37	....	71	....	102	....	279	....

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* See footnote, Table 1.

† If other function measurements are normal, hyperventilation compensates for the slight increase in the residual air volume.

on the residual air percentage of total lung volume (Table 2). Although this percentage grouping is somewhat arbitrary, other related physiologic measurements substantiate the validity of the classification for diagnosis, study and evaluation.[6] Thus in 35 per cent of the 500 cases, pulmonary emphysema was not a significant factor in producing disability (Table 2). Residual air measurements were not obtained during periods of upper respiratory infections or asthmatic attacks or other temporary abnormalities which were clinically apparent, so that the residual air measurement represents the best baseline measurement obtainable in each case. In a comparison study of the residual air volumes at rest and during a steady state of moderate treadmill exercise, in 51 cases the changes in residual air percentage of total lung volume were found to be small (average increase 1.4 per cent) even in extensive pulmonary emphysema.[9] Upper respiratory infections or asthmatic attacks produce temporary decreases in vital capacity and increases in residual air, so that during the involved period, the mixing and dilution problem is increased in some cases to pronounced degree. An increased residual air volume represents a potential hazard which may produce complete incapacity during periods of respiratory infections. A residual air volume over 35 per cent of total lung volume is abnormal and indicates the presence of emphysema in clinically significant degree. In some cases a marked degree of reversible bronchospasm exists. In this condition treatment with bronchodilator drugs results in some reduction of residual air and some increase of vital capacity, but the normal state is not restored and the change in residual air percentage of total lung volume is usually small if the baseline study is obtained as described.

A high degree of reversible bronchospasm may exist without an increased volume of residual air. Some patients with a considerable increase in residual air volume have minimal disability, as compensatory hyperventilation is good, and the dyspnea level is not reached even with moderate exercise. This indicates the value of good ventilation (vital capacity and maximal breathing capacity) in limiting the disability resulting from pulmonary emphysema. A correlation was noted between the degree of emphysema and the incidence of strain upon the right side of the heart,[4] but the typical electrocardiographic findings are absent in about 40 per cent of the cases with a far advanced degree of emphysema (over 55 per cent of total lung volume residual air). Emphysema of a far advanced degree is disabling and the evaluation of disability may be made on this measurement alone. The residual air volume determination is one of the most important function measurements in disability appraisal. An increased residual air volume (above 35 per cent of total lung volume) is abnormal and represents emphysema, not a temporary insufflation of the lungs.

Vital capacity, although a useful and essential measurement, has but limited value alone. In general, vital capacity decreases as the degree of pulmonary emphysema increases[10] but because of the wide range of individual variations the usefulness of this measurement is limited, unless the values are extremely low (less than 1,800 cc. in men) or very high (above 4,200 cc. in men). A vital capacity of 2,000 to 3,000 cc. may exist without emphysema or with a far advanced degree of emphysema, with slight disability or total disability. The shape of the spirogram tracing[7] supplies useful information on the state of the lungs, as well as giving the vital capacity volume. When more than three seconds is required to blow most of the air out of the lungs after a deep inspiration, impairment is indicated. This may be due to loss of elasticity or to obstruction or to both. The time element and the shape of the spirogram tracing should be taken into consideration in analyzing vital capacity tracings (Figure 1). This time factor is usually ignored. The three-second vital capacity represents the maximal portion that is of use, for if a longer time interval is required, the individual cannot make use of the added portion with breathing rates of 12 to 15 per minute.

Maximal breathing capacity is both a time and volume measurement, and the normal values for men range from 120 to 180 liters per minute, depending on the age and size of the subjects and the technique used.[5] In general, if the maximal breathing capacity (MBC) measurement is less than 40 liters per minute in men the degree of pulmonary emphysema and function impairment is significant, but insignificant if the MBC is over 120 liters per minute, and otherwise indeterminate for values between 40 and 120 liters per minute. If the MBC is good, hyperventilation can compensate partially or completely for the mixing and dilution factor imposed by the increased residual air volume in pulmonary emphysema. In general, compensatory hyperventilation is adequate in the absence of other complicating factors for increases in residual air volumes up to about 35 per cent of total lung volume[11] as shown by changes (see Figure 2) in arterial pCO_2 (increased above 40 mm. of mercury). Above this value, however, hyperventilation is often inadequate to maintain normal gas exchange.

Since measurement of the maximal breathing capacity appears to have practical value in the early detection of fibrosis and bronchial obstruction it would seem desirable to take MBC measurements routinely along with chest roentgenograms of industrial workers exposed to dust hazards. If the MBC

Figure 1-A.—Spirogram tracings of vital capacity. Read from right to left. Time intervals between vertical lines, 12 seconds. Vital capacity (VC) was measured both by having the subject take the deepest possible breath after a forced expiration and exhale as far as possible after taking the deepest possible breath. In chronic pulmonary disease one may give a slightly higher figure than the other, but in normal persons there is no significant difference. Note the abnormal shape of the spirogram tracing and the prolonged time required for exhalation after a deep inspiration. The normal exhalation time should be three seconds or less. The expiratory reserve (ER) is the part below the quiet breathing baseline, and the inspiratory volume (IV) is the part above this baseline. The volume of air exhaled in the first three seconds represents the maximal usable part of the VC measurement. The rest of the volume of air shown is nonfunctional.

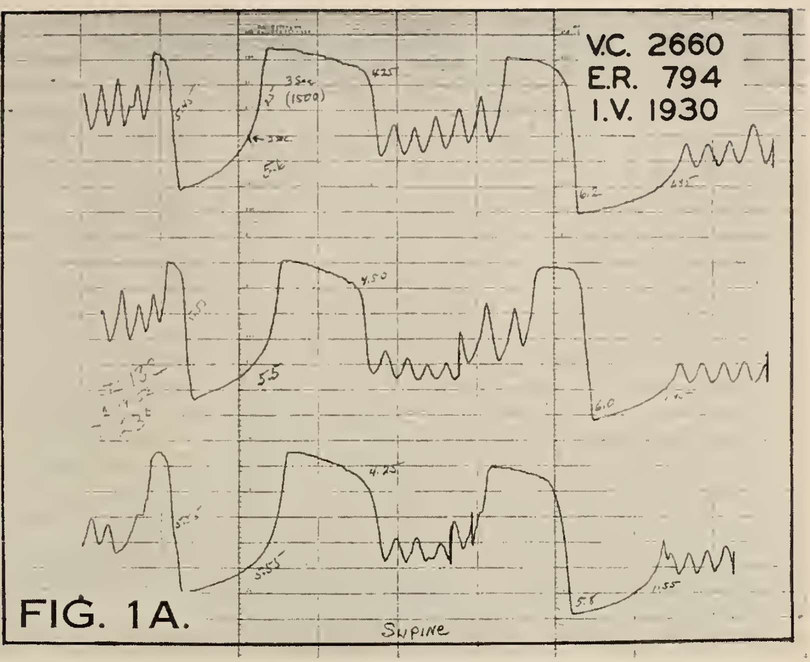

FIG. 1A.

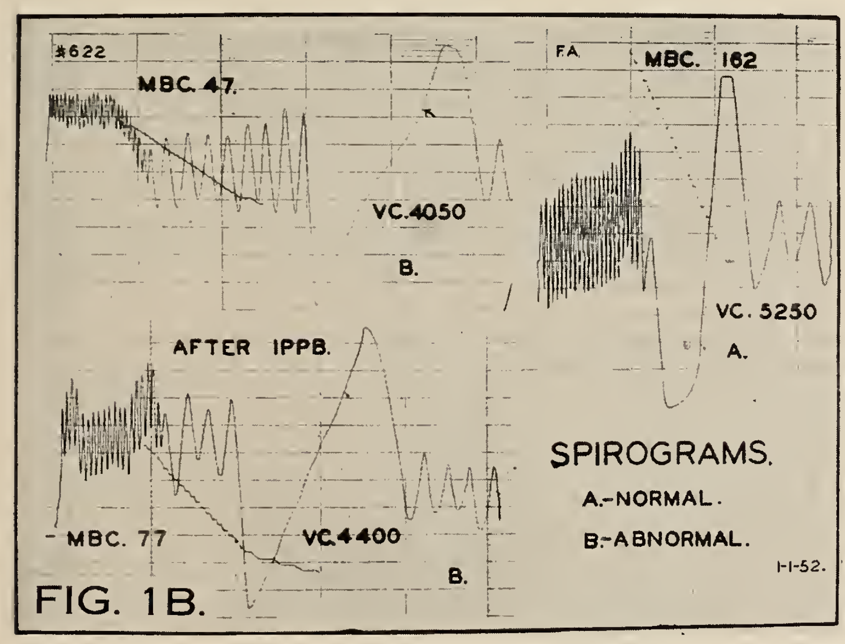

FIG. 1B.

Figure 1-B.—Normal and abnormal spirogram tracings of vital capacity and maximal breathing capacity are shown. Note in the abnormal tracing 22 seconds was required to complete exhalation and although the total vital capacity volume was 4,050 cc., actually the maximal usable part of vital capacity was 852 cc. (that volume exhaled during the first three seconds). The lower part of the abnormal tracing was after intermittent positive pressure breathing (PPB) treatment with a bronchodilator drug, Vaponefrin.® Note the abnormal shape of the spirogram tracing is still present although the maximal breathing capacity (MBC) was increased from 47 to 77 liters per minute.

measurements decrease progressively from year to year, the indication is that fibrosis and loss of lung elasticity with obstruction are developing and the individual should be removed from dust hazards, regardless of roentgenologic appearance of the chest at the time.

The arterial blood oxygen saturation was determined routinely in all cases both at rest (basal type) and immediately after step-up exercise, and in addition in 122 cases during a steady state of treadmill exercise. A comparison of the arterial blood oxygen saturation after exercise with the saturation when the subject is at rest is most important in disability evaluation. If the saturation drops 5 per cent or more with exercise the prognosis is poor; whereas, if the saturation increases above the resting value with exercise the prognosis is favorable. The resting arterial blood oxygen saturation was poorly correlated with pulmonary function impairment.[6] A normal resting arterial blood oxygen saturation (96 per cent) has been observed to decrease 10 per cent with mild step-up exercise. Some persons who have subnormal oxygen concentration in arterial blood while at rest (even as low as 88 per cent) have increases of from 5 to 8 per cent upon exercise, a change brought about by the more uniform alveolar aeration accompanying the deeper breathing.[12]

Direct measurements of arterial pO_2 (Figure 2) provide a more sensitive index of early changes impairing the respiratory gas exchange than the arterial blood oxygen saturation (as determined from the content and capacity measurements), because the magnitude of the pO_2 changes is much greater and this greater range permits a better analysis of the specific factors producing impairment in the respiratory gas exchange. The effective inspired pO_2 varies with the barometric pressure and the proportion of oxygen in the inspired air. The average pO_2 sea level values of breathing air are: inspired, 150 mm. (mercury); alveolar, 100 mm.; arterial blood,

Figure 1-C.—A spirogram tracing of a very low vital capacity of 1,725 cc., but note that the entire volume was exhaled in three seconds; hence the effective vital capacity in this patient was actually higher than the 4,050 cc. shown in the abnormal tracing in Figure 1-B. The maximal breathing capacity was 81 liters per minute, indicative of a rapid exhalation. This tracing demonstrates the importance of recording the shape of the exhalation pattern by a rapid spirogram tracing, and that the three-second vital capacity is a much more significant measurement than the total vital capacity volume when the time factor is ignored.

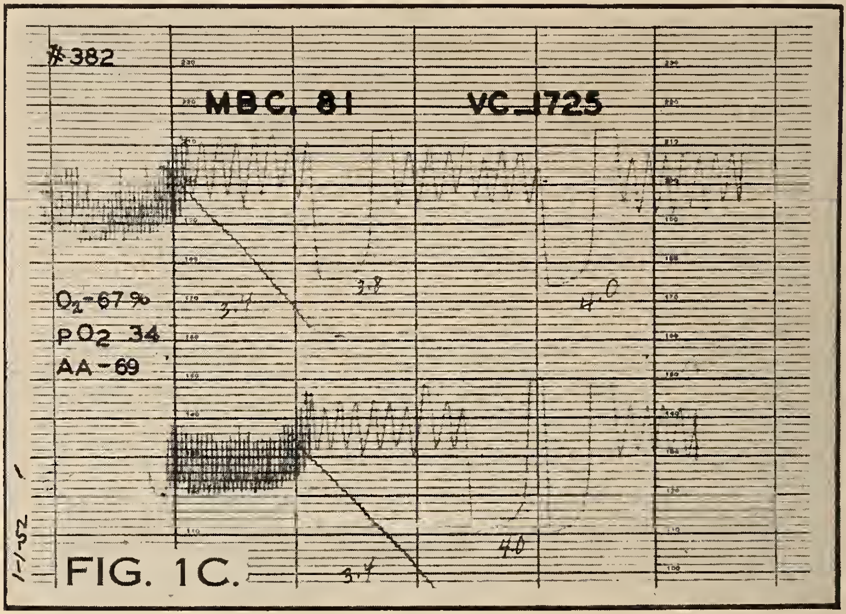

FIG. 1C.

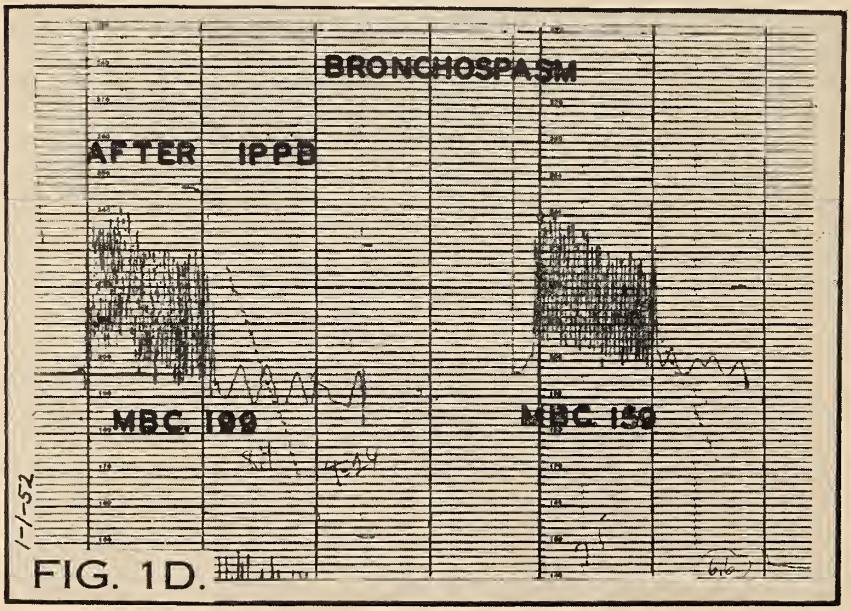

FIG. 1D.

Figure 1-D.—Spirogram tracings of maximal breathing capacity in a normal person with a value of 159 liters before and 199 liters immediately after one treatment with intermittent positive pressure breathing and Vaponefrin.® Diagnosis: Chronic tracheobronchitis with bronchospasm secondary to postnasal discharge of chronic sinusitis.

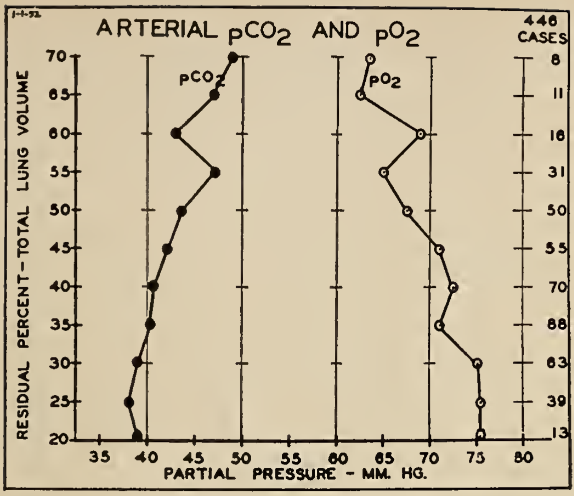

Figure 2.—Correlation between the residual percentage of total lung volume on the ordinate and the arterial pCO_2 and pO_2 partial pressures, in mm. of mercury, by direct determination in 446 cases of silicosis with fibrosis and emphysema. The individual points plotted for pCO_2 and pO_2 represent the average for the number of cases in each range of 5 per cent for the residual per cent of total lung volume (for example, 88 cases are represented with an average residual per cent of total lung volume of 35 per cent, plus or minus 2.5 per cent). It can be noted that when the residual percentage of total lung volume was greater than 35 per cent, the arterial pCO_2 was greater than 40 mm. of mercury, and this was increased progressively as the residual percentage of total lung volume was increased. The arterial pO_2 was decreased in the lowest group (residual 20 per cent of total lung volume) to 75 mm. of mercury (normal 100 mm. of mercury). The average pO_2 values were decreased progressively as the residual percentage of total lung volume was increased. A good correlation was found to exist between the increased arterial pCO_2 and the decreased arterial pO_2 with the increased residual percentage of total lung volume.

95 mm. If the expired air is collected at the same time as the arterial blood sample, the mean alveolar pO_2 can be calculated by the indirect method[18] (Figure 3) which assumes that the alveolar pCO_2 is the same as the arterial pCO_2. The mean alveolar pO_2 has been checked and reduplicated consistently by the indirect method in all types of patients with chronic pulmonary disease. Calculated arterial pO_2 values were found unreliable in studying patients with chronic pulmonary disease. In an analysis of 446 cases (Figure 3) the alveolar-arterial pO_2 difference was uniformly elevated independent of the residual per cent of total lung volume, but the alveolar pO_2 and inspired-alveolar pO_2 difference were correlated with the residual volume changes.

The distribution factor is the aspect most commonly involved, producing interference with the alveolar-arterial gas exchange in chronic pulmonary disease (Figure 4). Distribution refers to unequal alveolar aeration and perfusion, and the aeration factor concerns alveolar ventilation. At sea level the alveolar mean pO_2 is normally about 100 mm. of mercury, and blood perfusing alveoli will take up oxygen to a pO_2 level of about 95 mm. of mercury (normally saturated 96 per cent).

Alveolar aeration is impaired by loss of elasticity, fibrosis, obstruction from mucous plugs, secretions, partial atelectasis or depressed respiratory movement, as all of these conditions restrict the free movement of air in and out of the alveoli. Impaired alveolar aeration results in a lowering of the partial pressure of oxygen in the alveoli involved. Blood perfusing poorly aerated alveoli is incompletely saturated, but flows to the left side of the heart to mix with the normally saturated blood. The perfusion aspect of the distribution factor also includes those alveoli with complete aeration blockage but in which the blood supply is maintained. Such an alteration produces little shunts, there being no gas exchange in the blocked alveoli. Other alveoli may be ventilated but not perfused because the capillary blood supply is obliterated by fibrosis, thrombosis or vasoconstriction. The aerated but non-perfused alveoli represent physiologic dead space and decrease lung ventilation efficiency. The distribution factor has been found to be independent of the degree of pulmonary emphysema[6] (Figure 3).

The elevated mean alveolar-arterial oxygen gradient was decreased and the arterial oxygen saturation increased by intermittent positive pressure breathing using compressed air,[16] a response independent of the hyperventilation and increased blowing off of CO_2 produced by the respirators. The evidence from the intermittent positive pressure breathing data suggests that a more uniform alveolar aeration is accomplished by better inflation of those alveoli with impaired air circulation[13] (see Figure 4), partially correcting the interference produced by the mechanical obstruction resulting from fibrosis and the attendant loss of elasticity, often accentuated by bronchospasm. Some alveoli may be opened during intermittent positive pressure breathing which were totally closed during ambient breathing.

The per cent of oxygen removed from the air breathed in is a measure of the lung ventilation efficiency (normal 4 to 5 per cent at rest and 5 to 6 per cent during exercise, at sea level). For example, if the amount of oxygen removed from the air breathed is 4.5 per cent, then 45 cc. of oxygen is extracted from each liter of air breathed. If the amount of oxygen removed from the air breathed were greatly reduced, the volume of inspired air required would be proportionately increased for a given amount of work and oxygen consumption; hence, if the ventilatory measurements (MBC and vital capacity) are re-

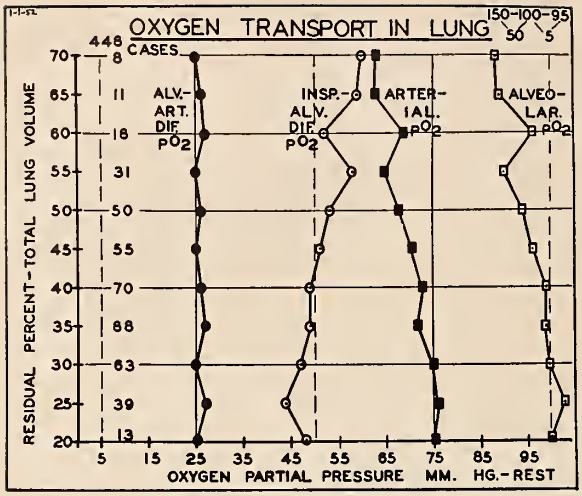

Figure 3.—The oxygen transport in the lungs was analyzed in the 446 cases referred to in Figure 2, using the same case grouping based on the residual per cent of total lung volume on the ordinate. The alveolar pO_2 was decreased progressively as the residual per cent of total lung volume was increased. If the residual was 40 per cent or more of total lung volume, the alveolar pO_2 was less than the normal value of 100 mm. of mercury. The arterial pO_2 values are parallel to the alveolar pO_2 changes. The difference between the inspired pO_2 and alveolar pO_2 was plotted in the same manner and correlated with the residual per cent of total lung volume. When the residual was 40 per cent or more of total lung volume, the inspired-alveolar pO_2 difference was greater than the normal sea level value of 50 mm. of mercury. The observed values less than 50 mm. of mercury resulted from hyperventilation when the residual was 35 per cent or less of total lung volume. An increased residual volume increases the difference between the inspired and alveolar pO_2, lowers the alveolar pO_2 and lowers the arterial pO_2 and the per cent saturation of the blood. When the alveolar-arterial pO_2 difference was plotted with the residual per cent of total lung volume there was no correlation. The average alveolar-arterial pO_2 difference was about 25 mm. of mercury, and this occurred in all of the groups, indicating the factor responsible for this gradient to be independent of the residual per cent of total lung volume. The alveolar-arterial pO_2 difference above was due to the distribution factor which is shown more graphically in Figure 4.

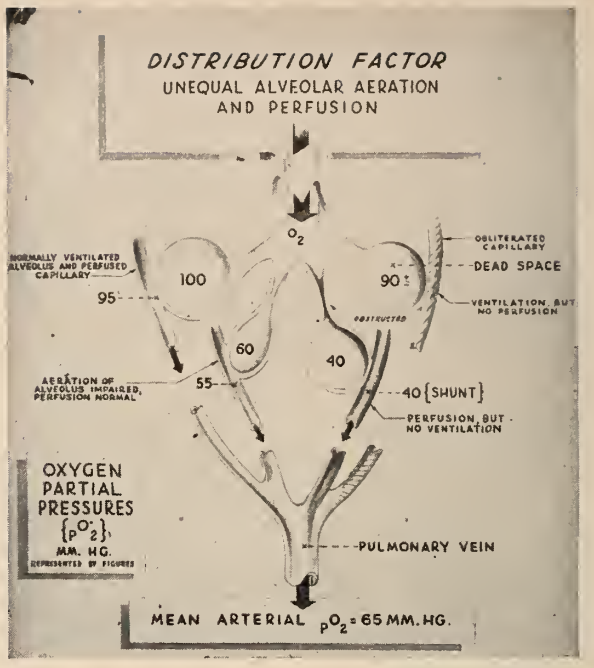
DISTRIBUTION FACTOR
UNEQUAL ALVEOLAR AERATION AND PERFUSION
O2
NORMALLY VENTILATED ALVEOLUS AND PERFUSED CAPILLARY
100
95
60
55
40
90±
OBLITERATED CAPILLARY
DEAD SPACE
VENTILATION BUT NO PERFUSION
OBSTRUCTED
AERATION OF ALVEOLUS IMPAIRED, PERFUSION NORMAL
40 {SHUNT}
PERFUSION, BUT NO VENTILATION
OXYGEN PARTIAL PRESSURES {pO2}, MM. HG. REPRESENTED BY FIGURES
PULMONARY VEIN
MEAN ARTERIAL pO2 = 65 MM. HG.

Figure 4.—A schematic diagram indicating the disturbed relationship between alveolar aeration and perfusion, as produced by pulmonary fibrosis, retained secretions, bronchospasm, emphysema, consolidation, pulmonary atelectasis or depression of respiration. Intermittent positive pressure breathing increases the effective pO_2 in alveoli with impaired aeration, but still perfused with blood, and increases the per cent saturation of the arterial blood. Intermittent positive pressure breathing has no effect on the oxygen transfer in alveoli which are perfused but non-aerated unless some alveoli are opened up by the increased inspiratory pressure. The distribution factor is characteristic of chronic pulmonary disease with fibrosis and emphysema.

duced, the individual may be unable to meet the elevated oxygen requirement. No correlation was found between the degree of pulmonary emphysema and the per cent of oxygen removed at rest (Figure 5), and only a slight average decrease with exercise. In most instances the lung ventilation efficiency was reduced, but this test as an isolated measurement was of limited value in estimating disability.[14]

The duration of dyspnea was determined subjectively after the step-up exercise test (30 steps on a stool 20 cm. high in one minute). This test is a practical one for pulmonary function, although not as a measure of physical fitness. Normal duration of dyspnea after the test is 90 seconds. Duration of dyspnea up to 120 seconds is a *slight* prolongation, from 120 to 180 seconds a *moderate* prolongation, and upward of 180 seconds *advanced* prolongation. When the ventilatory, residual air and arterial blood saturation measurements are essentially normal, prolonged dyspnea after the step-up test indicates increased pulmonary vascular resistance. A significant reduction in the expansibility of the pulmonary bed is indicated when the oxygen uptake is less than 400 cc. per square meter of body surface area during the one minute step-up exercise. Increased pulmonary vascular resistance especially during exercise is a factor in most cases of chronic fibrosis and emphysema, and is the primary factor in some cases as evidenced by the profound dyspnea after the one minute step-up test. Since the duration of dyspnea is a subjective test, the significance of a prolonged time requires careful evaluation in the individual case and is subject to the limitations of this type of test.

No correlation was noted between the degree of pulmonary emphysema and the circulation times obtained by either the arm to lung (ether) or arm to tongue (Decholin®) tests[14] (Figure 6). A pronounced

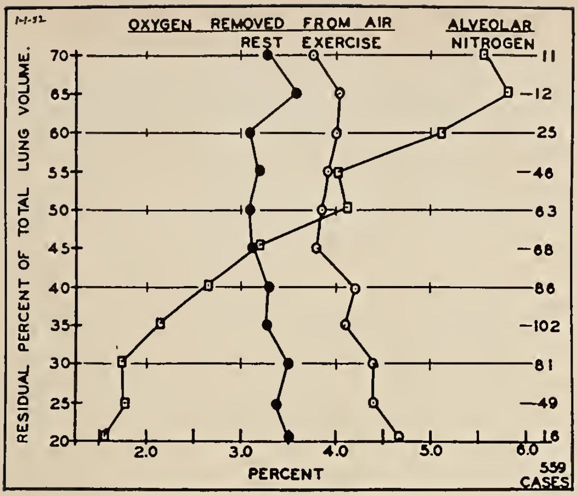

Figure 5.—The correlation between the per cent of oxygen removed from the inspired air both during rest and exercise and the residual per cent of total lung volume for 559 cases (as in Figure 2). The per cent of oxygen removed from the inspired air was decreased slightly at rest and during exercise as the residual per cent of total lung volume was increased. In contrast, note the good correlation obtained by plotting the alveolar nitrogen per cent after breathing 100 per cent oxygen for seven minutes with the residual per cent of total lung volume. The per cent of oxygen removed from the inspired air during rest and exercise (may be expressed as a ventilatory equivalent) was reduced some from the normal in most cases, but unless this value was very low it was not a significant factor in evaluating disability or pulmonary function.

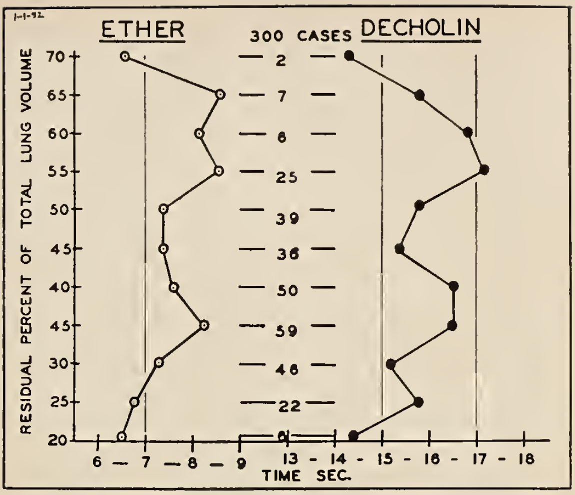

Figure 6.—The ether (arm to lung) and Decholin® (arm to tongue) circulation times correlated with the residual per cent of total lung volume in 300 unselected cases of fibrosis and emphysema. The number of cases for each group is shown in the center. There was no significant difference for either the ether or the Decholin circulation times with respect to the degree of emphysema as indicated by the residual per cent of total lung volume. If either the ether or the Decholin time were abnormally prolonged, a definite cardiac factor was indicated.

prolongation of circulation time indicated definite cardiac involvement.

Plasma volume studies in 138 coal miners with silicosis and respiratory complaints (using the Gregerson T-1824 dye method) revealed an increase of 10.2 per cent in the emphysema group and 5.4 per cent in the non-emphysema group[20] with an average packed cell volume of 42.4 per cent of the whole blood. The plasma volume was decreased slightly during treadmill exercise.

The average oxygen capacity in 115 cases of soft coal miners and 385 cases of hard coal miners was 19.48 volumes per cent (equivalent to 14.54 gm. of hemoglobin) with a standard deviation of 1.267 volumes per cent (0.95 gm. hemoglobin). There was no difference in the two groups of miners. Polycythemia is not a factor in coal miner's silicosis, even in cases of pronounced cyanosis and emphysema, in the absence of frank cardiac failure. An elevated hemoglobin content indicates cardiac failure, but not fibrosis and emphysema *per se*.

There was no apparent correlation between pulse and respiration rates during rest and exercise and the degree of impairment of pulmonary function[14] because of the wide standard deviation observed in each group.[14]

Dyspnea[19] is the most common complaint of coal miners with silicosis, a symptom resulting from fibrosis and/or emphysema. However, only 65 per cent of all coal miners studied had a significant degree of pulmonary emphysema (Table 2). Dyspnea commonly results from alteration in breathing resistance produced by increase in the air-flow velocity. This may accompany exertion or any other situation which actively increases pulmonary ventilation such as the acute hypoxia which may occur with lipiodol instillation.[15] Bronchial obstruction is an important factor producing increased breathing resistance in many cases. Bronchial obstruction[16] may be either permanently fixed or reversible in various degrees by inhalation of bronchodilator drugs. The reversible type is referred to as bronchospasm and the relief afforded by the bronchodilator drug is probably mostly from the relief of the bronchospasm, although the vasoconstrictor element may be of some importance. Bronchospasm occurs in normal persons during infection of the upper respiratory tract, but this temporary abnormality does not hamper activity, owing to the large breathing reserve present. Fibrosis with loss of lung elasticity tends to cause retention of secretions, enhances irritation of the bronchial mucosa and predisposes to bronchospasm with defective aeration of alveoli, especially in the lung bases in cases in which there is pronounced impairment of diaphragmatic movement.

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Funds for Medical Schools

The sum of $671,834 was turned over by the American Medical Education Foundation to the National Fund for Medical Education for distribution to the 79 medical schools in the United States. This represents the amount collected from physicians during the first six months of 1952. This money added to the amount collected from industry by the National Fund for Medical Education was distributed July 31 in the form of grants amounting to $15,000 to each of the 72 four-year schools and $7,500 to each of the seven two-year schools.

—*A.M.A. News Notes*

Operations on Large Arteries

Application of Recent Advances

NORMAN E. FREEMAN, M.D., and FRANK H. LEEDS, M.D., ***San Francisco***

• *With the use of anticoagulants to prevent recurrence of thrombosis it is now possible to open a major artery which has been occluded by a thrombus, remove the thickened lining with the clot and restore the continuity of the vessel. Free vein grafts have been used successfully to replace arterial segments in the extremities. Vein inlay grafts are preferred in dealing with aneurysms of the abdominal aorta. The aneurysmal wall can be used to support the venous segments.*

It has been possible to by-pass aneurysms of the abdominal aorta by anastomosing the splenic artery to the left iliac artery. The use of the left superficial femoral artery as a by-pass to supply blood to the right leg is described.

As WITH THE PROBLEM of duodenal ulcer, surgical operation is not the answer to the problem of arteriosclerosis but it may be of considerable value in the treatment of complications of that condition. Whereas previously the therapy of vascular disease was limited to conservative measures and helping the patient to adjust to disability or to amputation—confession of therapeutic failure — now, in many cases, it is possible boldly to attack the cause of the poor circulation, the diseased artery itself.

Experiments of Murray and Best[5] led to the use of heparin in connection with vascular operations, both general and regional,[3] and so overcame the greatest obstacle to successful operations upon blood vessels, namely, thrombosis. Now with the use of anticoagulants the incidence of successful restoration of continuity has been greatly increased.

In 1947 DosSantos[6] first reported upon his experience with thromboendarterectomy of a major artery. The success of this operation depends upon the fact that a line of cleavage is present between the viable portion of the blood vessel wall and the atheromatous plaque with the thrombus. Arnulf[1] used the term "sequestrum" to denote this obstructing material. After securing adequate control of the component arteries, the main vessel can be opened, the obstruction removed and the artery sutured. Anticoagulants have generally been used to prevent recurrence of thrombosis during the time required for a new intima to be formed. Although it is too early to evaluate this procedure from the standpoint of ultimate results (the first successful "sequestrectomy" of the abdominal aorta was performed in this country by Wylie[7] of San Francisco only 18 months ago) the immediate results are often remarkable and gratifying.

An example of this new operation is the case of a patient with occlusion of the abdominal aorta and iliac arteries associated with severe hypertension.

CASE 1: The patient, 46 years of age, gave a history of sudden onset of weakness in both legs nine years previously. Symptoms of hypertension had developed one year previously. In a preoperative aortagram (Figure 1, *left*) complete occlusion of the abdominal aorta and iliac arteries was noted. The collateral circulation to the pelvis and lower extremities was effected mainly through the superior hemorrhoidal branch of the interior mesenteric artery. There was also partial occlusion of the left renal artery. The blood pressure preoperatively was 210 mm. of mercury systolic and 100 mm. diastolic. Thromboendarterectomy of the aorta and iliac arteries was carried out. An organizing thrombus which partially occluded the orifice of the left renal artery was also removed. The patient made a splendid recovery

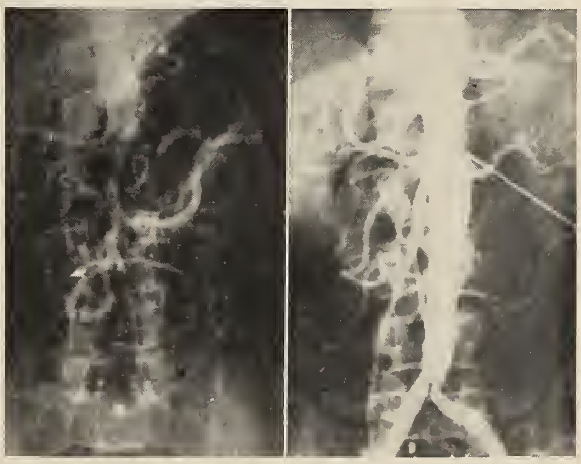


Figure 1.—*Left*, preoperative aortagram (Case 1). Complete occlusion of abdominal aorta and iliac arteries with partial obstruction of left renal artery. *Right*, aortagram following thromboendarterectomy, showing patency of the aorta, iliac, and both renal arteries.

From the Vascular Research Laboratory, Franklin Hospital, and the Department of Surgery, University of California Medical School, San Francisco.

Part of a Symposium on Cardiac Surgery prepared jointly by the Section on General Medicine of the California Medical Association and the California Heart Association, presented before the Section on General Medicine at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

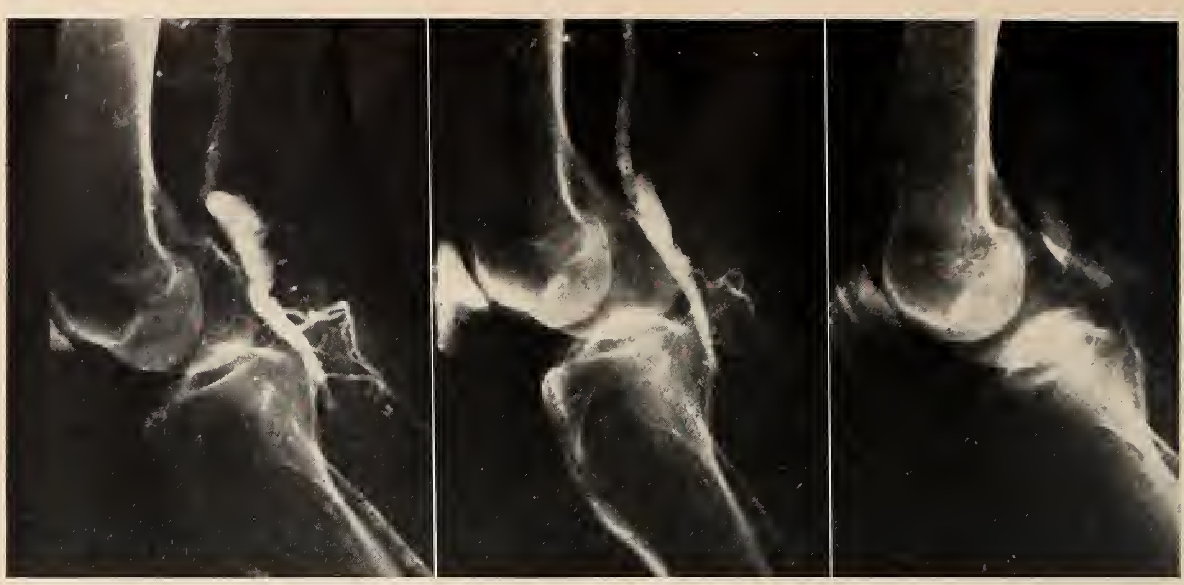


Figure 2.—*Left,* preoperative arteriogram of left popliteal aneurysm (Case 2) with early rupture. *Center,* two weeks after vein graft. *Right,* 18 months later. The calcification in the old aneurysmal sac was visible.

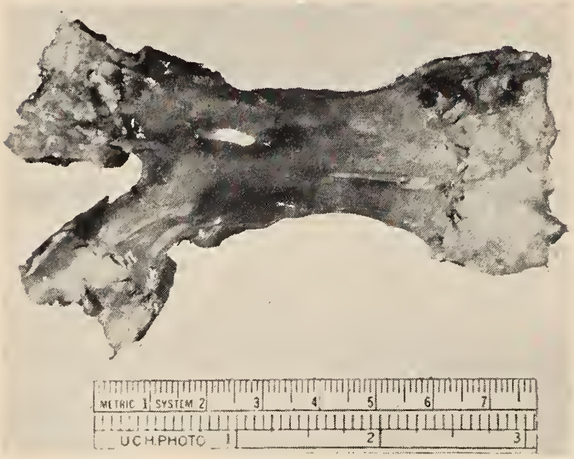


Figure 3.—Autogenous vein graft inserted into the terminal aorta of patient with an abdominal aneurysm. The rupture occurred ten hours postoperatively.

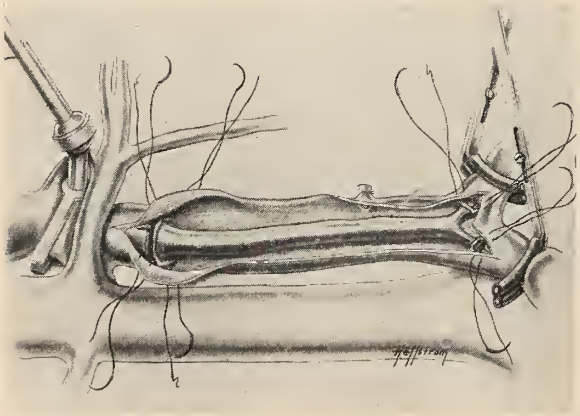


Figure 4.—Vein inlay graft of abdominal aorta using the left common iliac vein with its bifurcation.

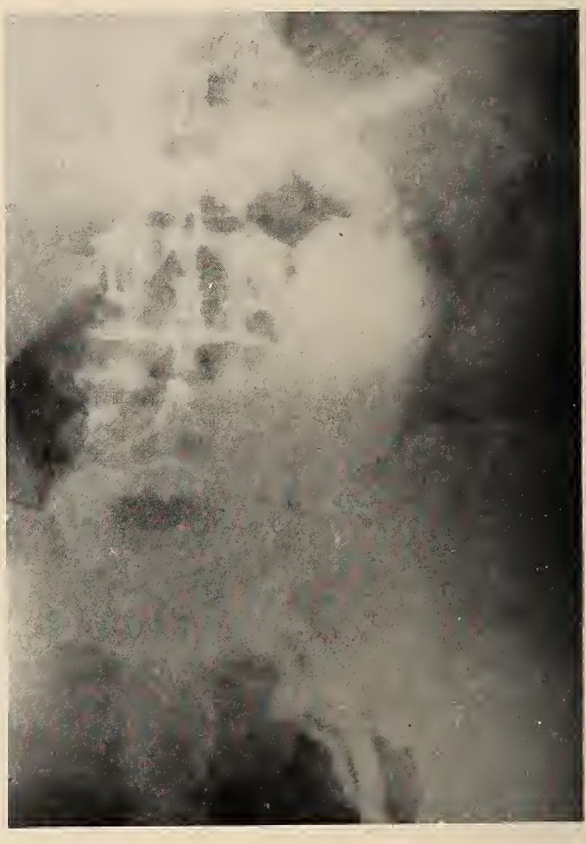


Figure 5.—A retrograde left femoral arteriogram, three months after operation, in a case in which continuity of the bifurcation of the abdominal aorta was restored by a technique in which the aneurysmal sac was used to support the venous segment. The patient was in good health 18 months after operation.

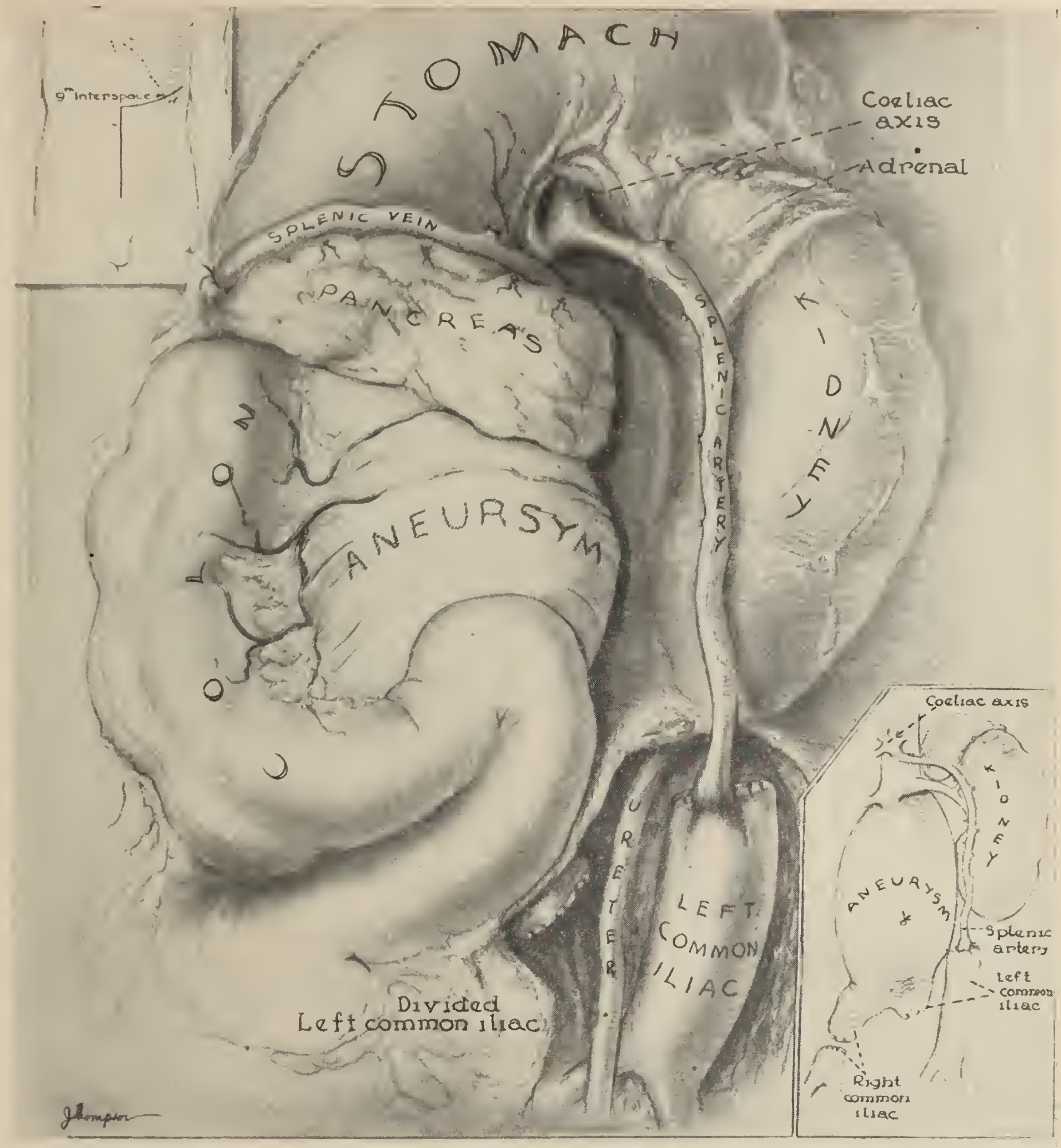

9th interspace
STOMACH
Coeliac axis
Adrenal
SPLENIC VEIN
PANCREAS
COLON
ANEURSYM
SPLENIC ARTERY
KIDNEY
URETER
LEFT COMMON ILIAC
Divided Left common iliac
Coeliac axis
KIDNEY
ANEURYSM
Splenic artery
Left common iliac
Right common iliac

Figure 6.—Spleno-iliac arterial by-pass around aneurysm of abdominal aorta.

and, when examined three months after operation, had excellent circulation to both legs. The blood pressure was 120 mm. of mercury systolic and 72 diastolic. The postoperative aortagram is shown in Figure 1, *right*.

Vein grafts, both homologous and autogenous, have also been used to span the gap left by the removal of diseased arterial segments. The use of vein autografts in the surgical treatment of aneurysms has been sufficiently well established to permit brief reference. The dangers inherent in substituting a vein for an artery are not so great in the limbs where rupture need not necessarily lead to exsanguinating hemorrhage. The patient in the following case has been followed for a sufficient period of time to permit adequate evaluation.

Case 2: A man 69 years of age had a popliteal aneurysm which had started to expand and was causing pain. At operation a segment of the femoral vein was inserted to replace the section of diseased artery. In an arteriogram taken two weeks after operation the graft was observed to be patent, and 18 months postoperatively was still satisfactory (Figure 2).

In the treatment of abdominal aneurysms a free vein graft may be too hazardous. For example, the fatal rupture of a segment of left common iliac vein with its bifurcation which had been inserted to replace the bifurcation of the abdominal aorta (Figure 3). The use of the aneurysmal sac to support the venous segment is illustrated in Figure 4. Within the past two years two patients have had successful restoration of the continuity of the bifurcation of the abdominal aorta by this technique. Figure 5 is an arteriogram taken in one of the cases. The patient was still in excellent health 18 months after operation.

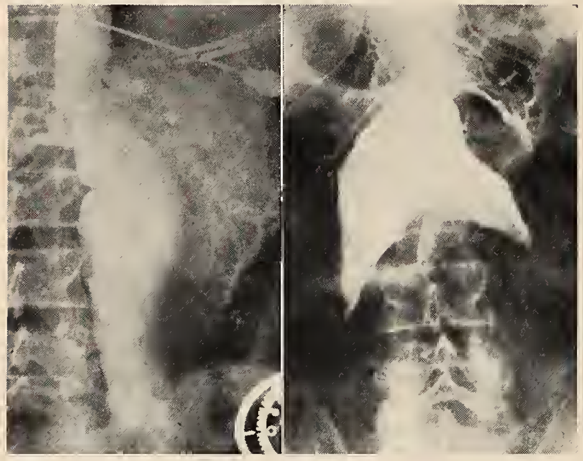


Figure 7.—*Left,* preoperative aortagram showing the large abdominal aneurysm. *Right,* postmortem study following fatal rupture of the left common iliac artery. The splenic artery can be seen partially filled just above the left renal artery.

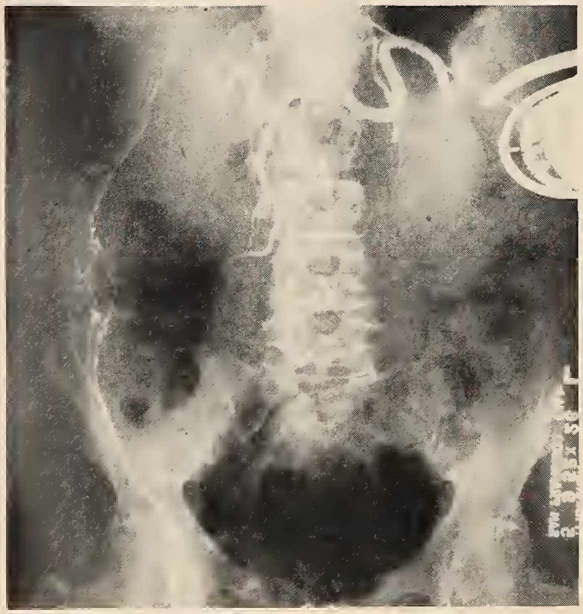


Figure 8.—Preoperative aortagram showing thrombosis of abdominal aneurysm extending to the celiac axis and involving the iliac arteries. Circulation to both kidneys was maintained through collaterals.

The use of an arterial branch to by-pass the diseased segment was first utilized by Blalock and Park[2] in anastomosis of the left subclavian to the distal aorta in the treatment of coarctation of that structure. Lam and Aram[4] used a vein graft to by-pass an aneurysm of the thoracic aorta. The authors recently anastomosed the splenic artery to the left iliac in two cases to by-pass aneurysms involving the aorta and iliac arteries. Figure 6 illustrates the technique employed. The immediate result was satisfactory in the first case but the aneurysm ruptured three weeks after operation. The preoperative aortagram and the study made after death in this case are

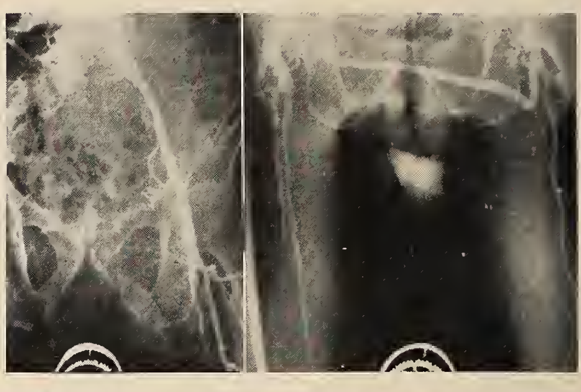
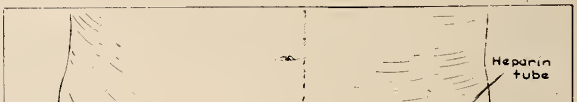


Figure 9.—*Left,* thrombosis of right iliac artery following thromboendarterectomy of left iliac artery. *Right,* arterial by-pass, left superficial femoral to right common femoral.



Heparin tube
Rt. common femoral art.
Femoral vein
Left superficial femoral art.
Left common femoral art
Circumflex art.
Profunda art
Protunda art.
Nerves
Femoral vein
Right superficial femoral art.
Left superficial femoral art.

Figure 10.—Use of left superficial femoral artery to supply blood to right leg.

shown in Figure 7. This by-pass technique was successfully used later in a patient with a thrombosed aneurysm of the abdominal aorta. The thrombus had extended upward as far as the orifice of the celiac artery. The preoperative aortagram is shown in Figure 8. After anastomosis of the splenic to the left iliac artery the aorta was divided below the renal arteries, the thrombus removed with a uterine curette, the aorta sutured and the aneurysm removed. After stormy convalescence the patient made good recovery. The left femoral pulse was palpable and the circulation to the right leg was adequate.

Another by-pass operation for a peripheral artery is illustrated by the case of a patient who had severe obliterative arterial disease of both legs. At the time of left ilio-femoral "sequestrectomy," an aneurysm of the right iliac artery was noted. Cellophane was wrapped about this arterial segment. Six weeks later, thrombosis occurred with gangrene of the toes of the right foot. In an aortagram (Figure 9), occlusion of the right iliac artery was observed. The right superficial femoral artery, however, was observed in subsequent films to be open. In addition it was noted in the aortagram that the circulation to the left leg was being carried on chiefly through the profunda femoris, indicating that the left superficial femoral artery was probably obstructed. At operation it was found that the left superficial femoral artery was occluded at the adductor tendon. It was divided at this point (see Figure 10), the obstruction removed and, after transposition beneath the tissues of the abdominal wall, was sutured to the distal end of the divided right common femoral artery. After operation (Figure 9, *right*) the arterial supply to both legs was carried on through the left common femoral artery. The circulation to both feet remained excellent with separation of the gangrenous tip of the fifth toe.

It is fully recognized that operative intervention does not solve the main problem—arteriosclerosis—since this condition is generally widespread and operation is limited to the particular vessel involved. However, it does give promise of relief of some of the complications when the disease is limited to a single vessel.

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Infectious Allergy

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• *The allergic reactivity which accompanies various infectious diseases is different in certain fundamental principles from the allergic disease associated with hypersensitivity to such agents as pollens, dust, and foods. Allergic sensitivity associated with tuberculosis comes about because of the participation of a fatty fraction of the bacillus with another component of the bacterium which is actually the sensitizing substance. The fatty fraction, if isolated from the bacillus, can act with various kinds of sensitizing substances that have nothing to do with tuberculosis to bring about the same kind of hypersensitivity that accompanies tuberculosis. Attempts are being made to learn more about the manner of action of this factor, and also to find out whether the organisms of other infectious diseases may have similar chemical constituents that cause allergic disease.*

A GENERAL STUDY of various immunological facets of experimental tuberculosis which has been carried on in the Department of Bacteriology and Experimental Pathology at Stanford University during the past eight years led to the trail of tuberculous hypersensitivity, and subsequently into the bypaths of allergic sensitivity to other infectious diseases. From those investigations have come certain factual information and some speculation about fundamental factors that may be responsible for these hypersensitive states.

Bacterial allergic reactivity is a manifestation of the group of hypersensitivities termed "delayed," and these are distinguished by certain important characteristics from other hypersensitive states which are called "immediate" and which are exemplified by anaphylaxis, Arthus reactivity, and the atopic states. Differences between these two broad categories extend to the *induction* of the respective reactive states as well as to the *reactivity* of sensitized subjects.

With regard first to induction, it is well known that infectious hypersensitivity requires for its establishment the presence in the tissues of something in addition to the antigen responsible for it. In all instances in which the sensitizing antigen has been chemically isolated from an infectious agent this antigen acting by itself has been found inadequate for the induction of infectious hypersensitivity in normal subjects. Consequently, over the years it has come to be generally recognized that infectious allergic reaction cannot occur save in the presence of the infectious agent itself in the body, albeit this need not necessarily be living. In contrast, it is well known that any soluble or insoluble antigenic substance can give rise to the immediate type of hypersensitive state.

With respect to the reactivity of sensitized subjects, there are several features which distinguish these two states. First, the chronological sequence of events following the local or systemic application of antigen differs; from this fact, of course, the two categories have derived their names. Secondly, it is well known that humoral antibodies are intimately associated with the immediate hypersensitive state whereas no relationship between antibodies of blood or tissue fluids has been established for delayed reactivity. Consequently, delayed reactivity cannot be transferred to normal subjects by serum, while immediate reactivity can be so transmitted. (Certain cells, on the other hand, can transfer both forms of reactivity.[3,7,8,9,10]) Finally, the cellular responses in delayed hypersensitivity are more catholic than are those in the immediate type. So far as is known, all cells of the body with bacterial allergic sensitivity are capable of responding to the proper bacterial antigen; recent evidence indicates that this may extend even to the erythrocytes.[16] On the other hand, in immediate hypersensitivity the responsive units seem to be restricted to smooth muscle, blood vessel endothelium, collagen, and possibly mucus-secreting cells such as those of the respiratory tract. In a "geographical" sense of course this means that practically any part of the body may become involved in a hypersensitive response of the immediate kind, but the cellular basis for this is more limited than that which underlies delayed reactions.

These various differences provide criteria which may be applied to the controlled study of allergic reactivity. The factor of time necessary for the elicitation of the reaction, for example, provides a simple,

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Most of the experimental work upon which this paper is based has been supported by grants from the National Tuberculosis Association, the California Tuberculosis and Health Association, and the Alameda County Tuberculosis and Health Association.

Presented before the Section on Allergy at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

but rather subjective, basis for distinction. A more objective ground is supplied by the study of the capabilities of humoral antibodies of the hypersensitive subject to transmit reactivity. Perhaps the best objective evidence, however, comes from a study of the cells able to react to exposure with antigen. If tissues from subjects with immediate reactivity are isolated for studies of this kind *in vitro* or if observations are carried out *in vivo* as has been done by Abell and Schenck,[1] it is observed that only those cells and tissues mentioned above visibly take part in the reactions to antigen. If, however, tissues without smooth muscle are explanted, then the circumstances are propitious only for the demonstration of the delayed form of reactivity, for in the absence of vascular elements or smooth muscle, nothing visible happens. If changes in collagen can occur in these circumstances, they have not been described. Studies of the reactions of cultures of bone marrow, spleen, and other tissues have consequently played an important part in the development of present knowledge of the reaction mechanism in hypersensitivity. The two photographs in Figure 1 illustrate the point. The picture on the left is of the bone marrow of a guinea pig which had been brought to a high level of anaphylactic sensitivity by the injection of protein obtained from the tubercle bacillus. (Any other soluble antigenic substance would have served as well for this demonstration.) The point is that this animal had pronounced Arthus reactivity to the intradermal injection of the protein and, several days before this fragment of tissue was taken, had pronounced anaphylactic symptoms following the injection of a minute amount of the antigen into the bloodstream. The photograph was made after the bone marrow cells in culture had been subjected to the presence of the protein for 24 hours. These cells are viable and motile; they are entirely unaffected by the presence of the antigen to which the animal itself was highly sensitized. In contrast, the photograph at the right reveals the situation under exactly the same experimental circumstances except that the bone marrow was removed from an animal sensitized to the tubercle bacillus. The allergic reactivity of this animal is directed against precisely the same protein of the bacterium, but in this case it is obvious that the cells of the marrow are so highly responsive to the presence of the protein antigen that death of most or all the cells has occurred.

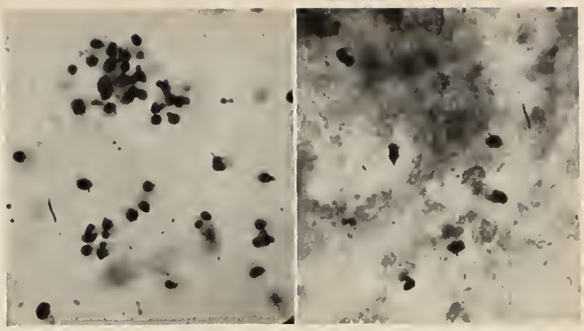
Figure 1.—*Left*—Bone marrow culture from guinea pig sensitized to tuberculoprotein. These cells have been exposed to the antigen for 24 hours and remain unaffected. (Hematoxylin and eosin stain, × 900.) *Right*—Bone marrow culture from tuberculous guinea pig after exposure to tuberculoprotein for 24 hours. Extensive cellular destruction has occurred. (Hematoxylin and eosin stain, × 900.)

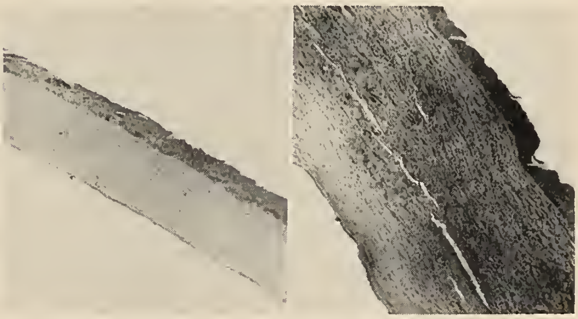
Figure 2.—*Left*—Cornea of guinea pig sensitized to tuberculoprotein. Forty-eight hours earlier a droplet of antigen had been injected, but no evident injury resulted. (Hematoxylin and eosin stain, × 85.) *Right*—Intense inflammation of cornea of tuberculous guinea pig 48 hours after injection of tuberculoprotein. (Hematoxylin and eosin stain, × 85.)

An analogous but more simply performed objective criterion to permit the distinction between immediate and delayed hypersensitivity is furnished by the use of the cornea of the sensitized animal for observations of reactivity. As the cornea is without blood vessels or smooth muscle, it is incapable of entering into a reaction of the immediate type. If a small droplet of antigen is injected into the cornea of an animal with anaphylactic hypersensitivity and the tissue is observed for the following one or two days, no change is noted beyond the slight trauma incident to the injection itself. In contradistinction, an injection of the responsible antigen into an animal with delayed hypersensitivity leads, in 24 to 48 hours, to the development of striking keratitis. As is to be expected, if vascularization of the cornea is induced by treatment with some nonspecific irritant in advance of the test, then it is possible to evoke a corneal response in the anaphylactic animal also. Figure 2 illustrates these points. The photograph to the left in Figure 2 is of a section of the cornea of a guinea pig with a high level of anaphylactic reactivity to tuberculoprotein. The preparation was made two days after the injection of antigen into the cornea, and there was no detectable change in the tissue. In contrast to this, the photograph to the right is of the cornea of an animal with delayed reactivity to the same antigen as the result of tuberculous infection; the reaction was intense and probably was accompanied by destruction of corneal cells. The two cases illustrated in Figure 2 are entirely analogous to the two illustrated by tissue culture photographs in Figure 1.

The allergic reactivity of tuberculous infection is amongst the most striking of the hypersensitive states accompanying infectious disease. It has been known for some years that the remarkable responsiveness which the body may develop to this bacillus is actually directed against the easily separated proteins of the organism. This fact was established upon a firm basis some years ago when Seibert[17] successfully crystallized a protein of the microbe and demonstrated its ability to elicit responses in tuberculous subjects, and it is substantiated daily through the use of purified protein derivative of the bacillus for clinical skin testing. Although this protein is a potent antigen its injection into normal animals does not eventuate in the development of the hypersensitive state characteristic of the disease itself. The humoral antibody response is good, and immediate hypersensitive reactivity of a high order becomes readily demonstrable in animals treated in this fashion.

For some years the question has been this: What distinguishes the antigenic activity of this protein as it exists in the body of the tubercle bacillus from that which it shows as an isolated substance?

Several years ago, during the course of experiments in which attempt was being made to evaluate the responses of the body to various isolated components of the tubercle bacillus as well as to the bacterial body deprived of various of its constituents, it was noted that animals which had been repeatedly inoculated with bacilli from which lipoidal substances had been extracted with ether, alcohol, and chloroform, did not become reactive to old tuberculin. This result was striking because it was apparent from the same experiment that the protein of these defatted bacilli had not lost its antigenic properties, since high levels of antibody developed in the treated animals and they became anaphylactically sensitized. In the same experiment, there were groups of animals which had received bacilli that had been only partially extracted; thus, one group had been treated with microbes from which only the ether-alcohol soluble substances had been removed, while another received organisms extracted only with chloroform. It was noted that the group which had received the ether-alcohol extracted bacilli became sensitized, while the animals vaccinated with the chloroform-extracted bacteria did not become sensitized. It was already known from the work of Anderson[2] that ether-alcohol removes phospholipids from the tubercle bacillus, whereas chloroform extracts a waxy substance composed principally of mycolic acid, a long chain fatty acid, alone and in combination with a carbohydrate. It appeared, then, that this waxy substance must be concerned in the induction of tuberculous hypersensitivity to the protein of the bacillus. This inference was soon substantiated by the injection into animals of the isolated lipoidal factor along with the isolated protein. This resulted in the establishment of hypersensitivity to tuberculin, and the delayed nature of this hypersensitivity could be demonstrated by all the various criteria which have already been described. No other combination of bacterial elements imitated this effect. Since that time the portion of the waxy lipid concerned in this activity has been more definitely delimited. It appears to be the mycolic acid-polysaccharide ester portion, but certain recent additional findings have suggested that perhaps something even simpler than this may be concerned, the chemical nature of which has not yet been ascertained.[11, 12, 13] Meanwhile, Choucroun who had also been engaged in work with bacillary fractions came to the conclusion that a factor which she termed Pmko is concerned in infectious hypersensitivity. This factor has been shown by her to be the mycolic acid-polysaccharide complex.[4, 5]

At Stanford, studies have been carried forward in two directions to investigate the possibility that the phenomena observed in connection with tuberculous hypersensitivity might also be present in other allergic conditions. First, it was of interest to know whether other antigens than the tuberculoprotein might serve along with the waxy lipid to induce the delayed type of hypersensitivity in animals. This was found to be the case with two antigens tested, one a well-known protein, egg albumin, the other a simple substance which has the capacity to induce contact reactivity when injected into the skin, picryl chloride. In the case of the albumin, it was found possible to establish hypersensitivity analogous in all respects to that obtaining in tuberculosis. With picryl chloride, contact reactivity was induced by means of intraperitoneal installation of the chemical along with the lipoidal element. Picryl chloride when injected into the peritoneal cavity alone does not act as an incitant of contact reactivity.[14, 15]

The other line of investigation has been concerned with the possibility that there might exist in infectious agents other than the tubercle bacillus a similar relationship between a lipid and an antigen in inducing infectious allergy. For this purpose three organisms were chosen, one to represent the bacteria, one the viruses, and one the fungi. A group of C hemolytic streptococcus has served as the bacterium, vaccinia as the virus, and *Aspergillus niger* as the fungus. In each of these cases the allergy of infection reveals itself through tests with isolated proteins obtained from the respective agents. Some difficulty has been encountered in determining whether or not there may be a lipoidal factor analogous to that of the tubercle bacillus in these various agents, but so far evidence has been elicited that this may be the case in the streptococcus and the virus, although it is not conclusive enough to warrant publication of details. Results of work with the fungus cannot yet be interpreted.

Since these phenomena began to come to light, one concern of the investigators has been the question of the mechanism through which the lipoidal factor may modify the body so that it responds with delayed hypersensitivity to a protein antigen. So far as can be determined, the lipoidal factor itself has no antigenicity. The reactivity of the body is directed, as was mentioned previously, against the protein. The lipoidal factor possesses the ability to induce the formation of epithelioid and related cells, and it has been thought that these may be associated with the infectious hypersensitive response of the body. However, other portions of the bacillus which are not concerned in this hypersensitivity can also call forth such cells. It has been assumed that the lipoidal factor may in some way modify various cells so that they are more amenable to the entry of antigens than they would ordinarily be. For the purpose of studying this point, the tuberculoprotein used has been marked by the introduction of a bright colored dye into the molecule, in the hope that it might thus be possible to trace the distribution of antigen in the body under the influence of the waxy factor. So far the method has given no clue to support the hypothesis, but this may be owing to fault in the technique rather than to error in the hypothesis. It is difficult to see this dye in small amounts in the tissue. For this reason attempts are being made to trace the antigen by using a fluorescent compound such as is being employed by Coons[6] for studies of the distribution of antigens in the body.

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Leukemia

Duration of Life in Children Treated with Corticotropin and Cortisone

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• *The average duration of survival of 15 cases of childhood leukemia treated with corticotropin and cortisone was 6.8 months. This survival was the same as observed among 59 children who received no treatment, or treatment with x-ray, or blood transfusion alone.*

Despite the fact that objective evidence of remission was observed in 7 of 15 children treated with corticotropin and cortisone, the remissions were not reflected by a longer duration of life.

Treatment of childhood leukemia with corticotropin and cortisone appears to be a palliative measure, without significant effect on the duration of life.

In the therapeutic trials of corticotropin (ACTH) and of cortisone for neoplastic diseases, particular interest and emphasis have been manifested in their use in children with leukemia.[2, 3, 4] A recent summation[4] recorded the experience from eight clinical research centers. Of 218 children with leukemia treated with corticotropin or cortisone either alone or in combination with other therapy, 98 or 45 per cent were reported to have had objective evidences of clinical remission of the disease. The length of the remissions was from one to ten weeks. When subsequent courses of hormonal therapy were given, only a few of the patients had beneficial responses.

Few reports have emphasized the duration of life in patients treated with these hormones. This information would appear to be crucial for the evaluation of the effectiveness of the agents in leukemia, whether such evaluation is used for research or for practical therapeutic purposes.

In the present study of fifteen children with leukemia treated with corticotropin and cortisone it was noted that although there was objective as well as subjective evidence of clinical improvement, these manifestations were not reflected in a statistically significant prolongation of life.

PATIENTS AND METHODS

The diagnosis in all cases was supported by at least two examinations of aspirated bone marrow and by classical clinical and hematologic symptoms.

Corticotropin (adrenocorticotropic hormone or ACTH) and cortisone (17-hydroxy-11-dehydrocorticosterone)[†] were administered intramuscularly, usually in divided doses at 6- to 8-hour intervals. The daily dose varied from 25 mg. to 300 mg. Courses of ten days or more were followed by a rest period of seven to ten days before the alternative hormone was instituted.

All patients were on a low-salt diet (less than 1.0 gm. of sodium chloride per day) to prevent edema, and when practicable supplemental oral potassium chloride was administered to avoid hypokalemia. Supportive therapy with both antibiotics and blood transfusions was used in 12 of the 15 cases.

Examination of the patients, as well as determination of the content of hemoglobin, erythrocytes, leukocytes and platelets in the blood, was carried out at least twice a week, and more often when indicated. Studies of the chemical constituents of the blood were performed only for the proper care of the patient.

Table 1 presents the relevant data regarding the 15 children. Fourteen died, and autopsies confirming the diagnosis of lymphoblastic leukemia were available in 12. One patient (Case 4), who was alive more than two years after onset, had mild generalized adenopathy, and the predominant abnormal lymphocytes in the peripheral blood and bone marrow aspirate were consistently of the small, mature type. During the second year of the disease a few cervical nodes were enlarged and the spleen was barely palpable. The case must be considered one of chronic subleukemic lymphogenous leukemia.

Of the 14 patients who died, five (Cases 2, 3, 7, 12 and 14) were subleukemic during the course of the disease. Five patients (Cases 6, 9, 10, 11 and 13) had frank leukemia, with leukocytes numbering 20,000 to 500,000 per cu. mm. of peripheral blood. Four patients (Cases 1, 5, 8 and 15) had both leukopenia and leukocytosis during the course of illness.

From the Laboratory of Experimental Oncology, National Cancer Institute, National Institutes of Health, Public Health Service, Federal Security Agency and the Division of Medicine, University of California School of Medicine, San Francisco.

[†] Obtained from the Armour Laboratories and Merck and Company, respectively, through the National Institutes of Health.

TABLE 1.—*Effects of Corticotropin and Cortisone in Children with Leukemia.*

Case	Sex	Age	Duration Prior to Course (Mos.)	Hormone	Total Dose (Mg.)	Days Treated	Previous Therapy	Anti-biotics	Blood Trans-fusions	Subjective Improvement	Decreased Spleen Size	Decreased Adeno-pathy	Decreased Liver Size	Decreased Fever	Decreased —Leukemic Cells—		Increased Platelets	Duration of Effects (Wks.)	Survival from Onset (Mos.)
															Peri-pheral	Bone Marrow			
1.	M	1.5	1	Cort.	1,650	36	....	Yes	2	*	*	*	*	*	*	*	*	7	
			3	ACTH	1,050	18		....	....	*	*	0	0	0	†	0	—	2	
			4	Cort.	250	10		....	....	*	0	0	0	—	—	0	0	—	
			5	ACTH	625	13		Yes	2	—	—	—	—	—	—	—	—	—	6.0
2.	F	11	4	ACTH	1,700	14	....	....	2	*	—	—	—	*	—	—	0	—	
			5	Cort.	1,700	14		Yes	4	*	*	*	*	*	*	*	0	16	
			8	ACTH	1,700	14		Yes	....	*	—	—	—	0	—	—	0	—	
			9	Cort.	1,400	14		Yes	5	*	—	—	—	—	—	0	0	—	11.0
3.	M	3	2	Cort.	1,025	11	....	Yes	2	*	*	*	*	0	*	0	†	2	
			2.5	ACTH	600	12		Yes	....	*	0	0	0	0	*	0	†	2	
			3	Cort.	375	11		Yes	....	*	0	0	0	*	—	0	—	—	
			3.5	ACTH	350	15		Yes	....	—	—	—	—	*	—	0	—	—	
			4	Cort.	700	7		Yes	3	—	—	—	—	—	—	—	—	—	5.0
4.	M	2	5	Cort.	1,550	31	....	Yes	....	0	0	*	0	0	—	†	0	—	
			6.5	ACTH	500	10		....	....	*	0	0	0	0	—	—	0	—	
			7.5	Cort.	600	14		....	....	0	0	0	0	0	—	—	0	—	
			8.5	ACTH	350	14		....	....	0	0	0	0	0	—	—	0	—	living
			9.5	Cort.	900	21		....	....	0	0	0	0	0	—	*	0	—	(24.5+)
5.	M	3	5	Cort.	1,775	31	Amino-pterin	Yes	3	*	*	*	*	*	—	*	†	4	
			6	ACTH	550	18		....	....	*	—	—	—	0	—	0	—	—	
			7	Cort.	150	6		Yes	3	†	—	—	—	*	—	0	—	—	
			8	Cort.	1,000	10		Yes	2	—	—	—	—	—	—	—	—	—	8.5
6.	M	4.5	1	ACTH	625	7	....	Yes	4	*	*	*	*	*	*	0	0	2	2.5
			1.5	Cort.	425	8		Yes	....	*	*	*	*	*	*	—	0		
7.	M	2	0.5	ACTH	675	15	....	....	....	*	*	0	0	0	0	—	—	—	
			1.0	Cort.	600	14		....	....	*	0	0	0	0	0	0	—	—	3.5
8.	M	16	8	ACTH	300	2	....	Yes	18	*	—	—	0	*	—	0	—	—	9.0
			8	Cort.	2,950	18													
9.	F	3	0.5	ACTH	1,430	42	....	Yes	10	*	—	—	—	—	—	—	—	—	4.0
10.	M	11	1.5	ACTH	1,700	14	....	Yes	1	*	*	—	*	*	*	0	†	2	
			2.5	Cort.	400	4		Yes	3	—	—	—	—	—	—	—	—	—	2.5
11.	M	5	2	ACTH	4,700	28	Chicken-pox	Yes	1	*	*	*	*	0	*	*	*	5	
			4	Cort.	2,275	25		....	2	*	—	—	—	—	*	—	—	—	6.0
12.	M	3	1.5	ACTH	1,000	10	....	....	3	—	—	—	—	*	—	—	—	—	2.0
13.	F	5	6	ACTH	900	8	Melamine	Yes	1	—	—	—	—	0	—	0	—	—	6.5
14.	M	2	7.5	ACTH	187	4	....	Yes	3	—	—	—	—	—	—	—	—	—	7.5
15.	M	4	2.5	Cort.	1,150	14	X-ray	Yes	3	*	†	—	—	*	—	—	—	—	3.0

Symbols: * = definite effect; † = equivocal effect; — = no effect; 0 = not present or not determined.

Three patients were treated for leukemia with other agents before hormonal therapy was given. One of them (Case 3) received a course of aminopterin (4-aminopteroyl-glutamic acid) one month before treatment with cortisone. Another (Case 13) had had three courses of trisethylene melamine (tris-ethylene-imino-*s*-triazine), and one (Case 15) had had two courses of roentgen therapy necessitated by the presence of a large mediastinal mass that embarrassed respiration.

In Case 6, the patient was treated with 5 mg. of nitrogen mustard (methyl-bis-betachloroethyl amine) after completion of the hormone therapy, also because of a mediastinal mass. The excellent clinical remission in Case 11 was observed following the onset of chickenpox; the hormones were used primarily in an attempt to prolong the remission presumed to have been due to the acute infectious disease.

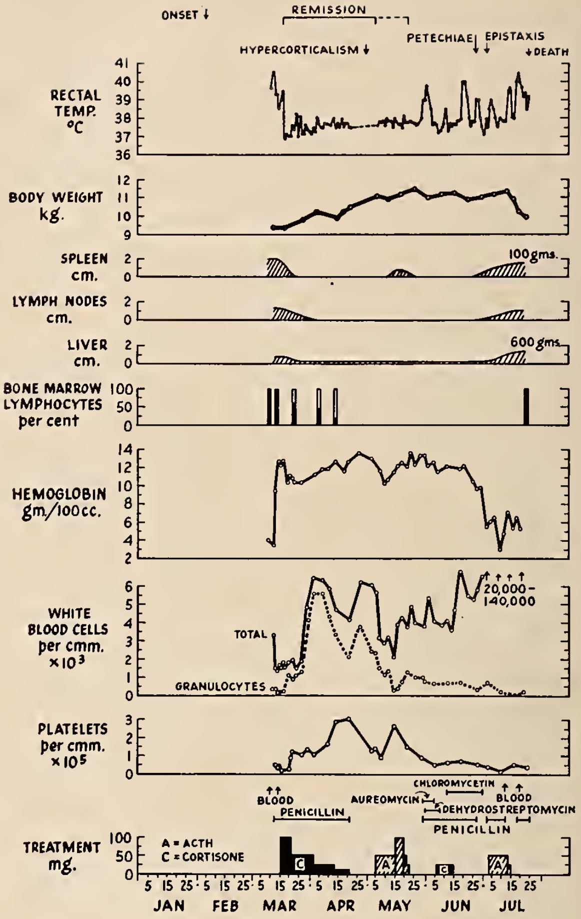
RESULTS

Subjective improvement during hormone therapy was observed in 12 of the 15 patients. Evidence of such improvement included more normal activity, expressions of a sense of well-being, reduced irritability, and better general appearance. This was accompanied by a great increase in appetite, to be anticipated with the use of the agents, and reduction of temperature to normal levels in nine cases.

Objective evidence of clinical improvement was observed in seven patients. Such evidence included significant and sustained reduction in the size of the spleen, liver and lymph nodes, and a significant decrease in the absolute number of leukemic cells in the peripheral blood and/or the bone marrow with a concomitant rise in the normal blood elements. A pronounced increase in the number of platelets was observed in two patients, and a slight transient rise in three others.

The typical, almost complete remission in Case 1 is detailed in Chart 1. A dramatic drop in temperature and reduction in the size of spleen, lymph nodes and the liver occurred within a week after the initiation of treatment with cortisone. There was a rise in the number of granulocytes in the peripheral blood, and, somewhat later, in the number of platelets. At the same time, the number of lymphoblasts and abnormal lymphocytes in the bone marrow dropped from 98 per cent to 25 per cent of the total number of leukocytes. The effects were sustained for approximately seven weeks, and were partially achieved for another two weeks following the second course with corticotropin. Subsequent hormonal therapy was without avail, and leukemic leukocytosis and hemorrhagic diathesis developed. The total duration of the disease, from clinical onset, was six months.

CHART 1



Results of treatment with cortisone and corticotropin in the case of an 18-month-old boy with lymphogenous leukemia.

The beneficial effects in five patients were transient, lasting two to four weeks. In two patients the remissions lasted five and sixteen weeks, respectively. Favorable response was noted in three of six patients with subleukemic disease, in three of five patients with frank leukemia, and in one of four patients who had both leukopenia and leukocytosis during the course of the illness.

The initial course of treatment was with cortisone in five cases, with three remissions, and with corticotropin in ten cases, with four remissions. In the plan of treatment these two agents were used alternately, with a rest period of seven to ten days between courses. Thus, nine children received a second course of the hormones; of four patients treated with corticotropin, two had remissions, but no further remissions occurred in five patients that received a second course with cortisone. Five children, including four who had responded to the first course of treatment, received four courses of the two hormones, but no remissions were observed with either the third or the fourth course.

During the course of treatment the usual signs and symptoms of hypercorticalism were observed in ten of the fifteen children. These consisted of rounding of the face, and enlargement of the abdomen. Edema of the extremities was noted in these patients, and was controlled by reduction in the dose of the hormones, further decrease of sodium intake and supplementation of potassium chloride. Transient elevation of blood pressure developed in two patients. None of the complications was serious.

The mean survival of all fifteen patients after the onset of symptoms attributable to the disease, including the single patient still living, was 6.8 ± 1.4 months. If the patient with chronic leukemia is not considered, the mean survival was 5.5 ± 0.9 months. The median survival, as determined by interpolation of the graphed data on all fifteen patients, was 4.8 months. Survival among seven patients who responded to treatment was from 2.5 to 11 months, and the average was 5.9 months. Survival among seven patients who had no objective response was from 2 to 9 months, and the average 5.1 months. Excluding the five patients who received x-ray or radiomimetic chemicals and the patient who had chickenpox, the mean survival of the remaining nine patients was 5.6 months.

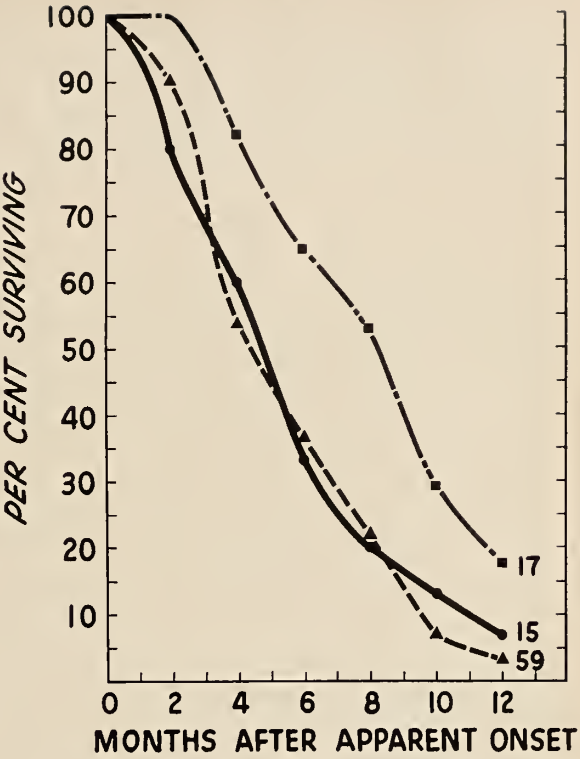
DISCUSSION

The results relative to duration of life in this group of patients were compared with a previous base-line study on the duration of life in 76 children with lymphogenous leukemia.[1] In that study it was noted that among 59 patients who received no treatment, or treatment with x-ray or blood transfusions only, the mean survival was 5.8 ± 0.5 months. Among seventeen patients who were treated with both antibiotics and blood transfusions, the average survival was 8.9 ± 1.2 months, a difference significant at the 2 per cent level. One of this group survived for 23 months; if this case is excluded, a mean of 8.0 ± 0.8 months is obtained. This mean is significantly different from the mean of the group of 59 cases at the 1 per cent level.

The survival of fifteen children treated with corticotropin or cortisone was 6.8 ± 1.4 months, or 5.5 ± 0.9 months if the patient with chronic leukemia who is still living is not considered. Neither of these means is significantly different from the mean of the 59 patients. If the mean on 14 children is compared with the mean on 16 children treated with antibiotics and blood transfusions, but excluding the case of longest survival, a difference significant at the 1 per cent level is obtained (5.5 ± 0.9 against 8.0 ± 0.8).

These data are graphically presented in Chart 2. It is quite clear that the duration of life in children with lymphogenous leukemia treated with corticotropin and with cortisone is the same as in the children who do not receive these agents. The clinical remissions, therefore, are not reflected in a longer duration of life. Since 12 of the 15 children who received the hormones also received antibiotics and blood transfusions, it could have been anticipated that the duration of life would have been closer to the mean of 8.9 months than the 6.8 months actually observed.

Chart 2



Duration of life in children with lymphogenous leukemia. Square dots, 17 children treated with antibiotics and blood transfusions; triangular dots, 59 children treated with x-ray, blood transfusions or receiving no treatment; solid line, 15 children treated with cortisone and corticotropin.

The analysis of the results on this small group of patients indicates that the effects of corticotropin and of cortisone in childhood leukemia were palliative, and that the duration of life was not increased by the use of these hormones.

Laguna Honda Home.

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Hemangiomas

Histologic Structure, and Treatment

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• *Hemangiomas are considered tumors originating in blood vessels and are classified as ectatic and hyperplastic. Controversy regarding active therapy occurs in the case of strawberry hemangiomas which are hyperplastic capillary hemangiomas. Although they may clear up spontaneously, on rare occasions they may predispose to grave sequelae. Port-wine stain hemangiomas should never be treated with x-ray or radium.*

HEMANGIOMAS are blood vessel tumors which may be the result of ectasia of preexisting vessels, a combination of ectasia and new growth, or new growth alone. It is because of differences in origin that the clinical and histological characteristics of these tumors vary and therefore call forth the many therapeutic measures advocated for eradication.

Ectatic tumors of blood capillary origin are known by the term *hemangioma simplex.* Such tumors may be either arterial (Figure 1) or venous (Figure 2) in origin, and either congenital or acquired. The congenital ones are the nevus flammeus (port-wine stain). At times they may involve the internal viscera and when associated with hemorrhages they have been designated as Rendu-Osler Weber's syndrome. Capillary cutaneous angiomas of the congenital ectatic type sometimes are associated with congenital neural anomalies such as the syndrome in which there is associated tuberosclerosis, Sturge-Weber's syndrome in which there is encephalofacial angiomatosis, and Lindau-von-Hippel's disease in which there is hemangiomatosis of the retina and brain.

Acquired ectatic capillary angiomas include the lesions designated as spider nevus or nevus araneus. They occur in women during pregnancy and even though they are extensively disseminated, they frequently disappear spontaneously after parturition. In both sexes they occur with liver disease such as cirrhosis. Exposure to below-freezing temperatures has occasionally been considered the cause of angiokeratoma of Mibelli, in which condition there is a keratoma overlying the ectatic capillary hemangioma occurring on the extensor surfaces of the lower extremities. Occasionally, capillary hemangiomas resemble pigmented nevi in clinical appearance, especially when they are on the mucocutaneous border of the lower lip where they appear as blue-black rounded macules (Figure 3).

Whether congenital or acquired, ectatic capillary hemangiomas are histologically the same. The papillary cutis and the papillary bodies are replaced by large numbers of dilated congested blood capillaries. These vessels lie directly beneath the epidermis. The vessel walls of these capillaries consist of a single layer of mature endothelial cells whose nuclei are elongated and flattened with their long axes running parallel with the long axis of the capillary. In nevus flammeus, associated with tumor formation, the ectasia of the blood vessels extends also into the reticular or deeper cutis.

The ectatic blood vascular tumors of larger vessels are classified under the term *hemangioma cavernosum* (Figures 4 and 5). As was previously noted, they may be associated with hemangioma simplex. These lesions are clinically bluish in color, and frequently are found not only in the skin but also in mucous membranes and internal organs such the tongue and liver. The most extreme type of congenital cavernous hemangioma is seen in the systemic hemangioma *unius lateralis,* in which an entire extremity becomes hypertrophied to elephantiastic size. The acquired cavernous hemangiomas include varicose veins, which might be based on hereditary vascular inferiority. Ectasia of larger blood vessels is also seen in inflammatory disease of the skin which is followed by loss of elastic tissue and atrophy—acrodermatitis chronica atrophicans. Cirsoid or racemose hemangiomas are arteriovenous fistulas which are characterized by pulsation, bruit, and alternate change of color from red to blue. Lesions of this type, when they occur on a lower extremity and are accompanied by ulceration, are sometimes mistaken for varicose veins and ulceration.

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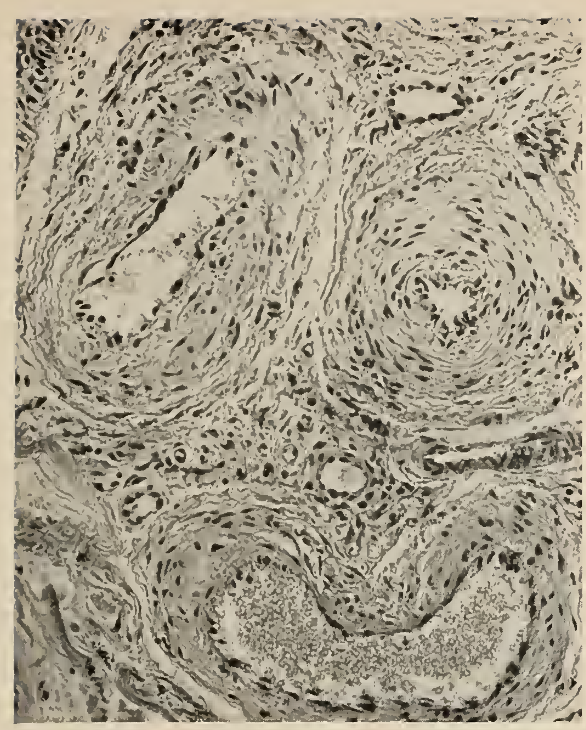

Figure 1.—Hematoxylin- and eosin-stained section (reduced from × 220). Ectatic capillary hemangioma of arteriolar origin. The endothelial cells are mature and flattened on the lumen of the vessels.

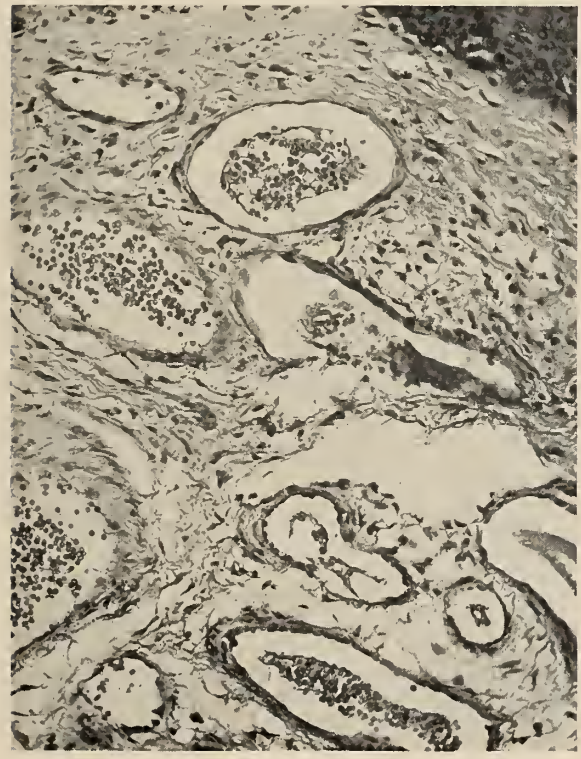

Figure 2.—Hematoxylin- and eosin-stained section (reduced from × 220). Ectatic capillary hemangioma of venous origin. The endothelium of the capillaries is flattened against the capillary walls. Large amounts of blood are in the vessels.

Histologically, in cavernous hemangioma not only is there ectasia of the larger vessels but, sometimes, perivascular fibrosis of varying degree depending on duration, on frequency of trauma and on the amount of manipulation. The smaller lesions appear to be surrounded by connective tissue almost to the extent of capsule formation. The larger, older lesions contain dense and thick fibrotic bundles of connective tissue between the ectatic congested blood vessels. At times this connective tissue appears to be almost hyalinized. The blood channels anastomose with each other and resemble the spaces in a sponge cut across. They are always congested and contain blood clots in various stages of thrombotic organization and recanalization.

Hypertrophic hemangiomas or strawberry birthmarks are present at birth or develop shortly afterward. They are not only the most common congenital hemangiomas but also the most common congenital tumors of infancy and childhood. They occur most frequently on the head, neck, and face at the sites of embryonal fissures and have therefore also been called the fissural angiomas.

Histologically hypertrophic hemangiomas consist of great numbers of dilated, closely aggregated capillaries with well formed endothelial walls (Figures

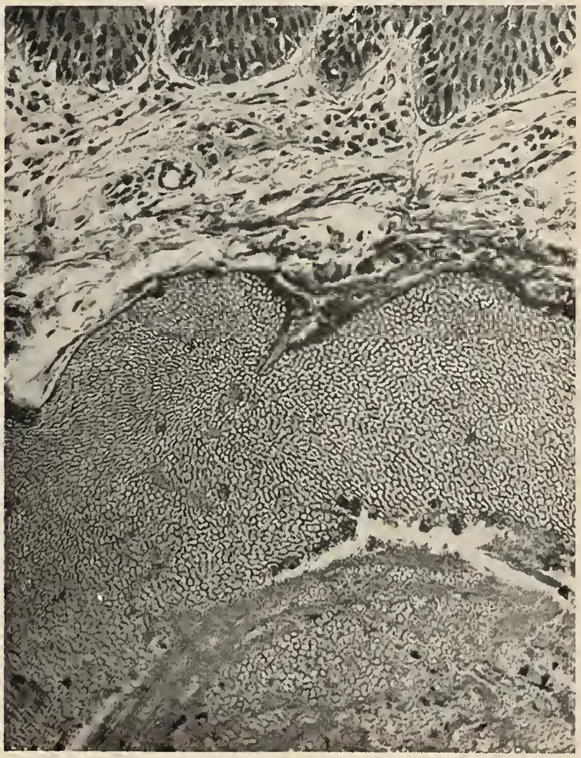

Figure 3.—Hematoxylin- and eosin-stained section (reduced from × 220). From a thrombotic ectatic vein on the lower lip. The endothelium is flattened against the vessel wall.

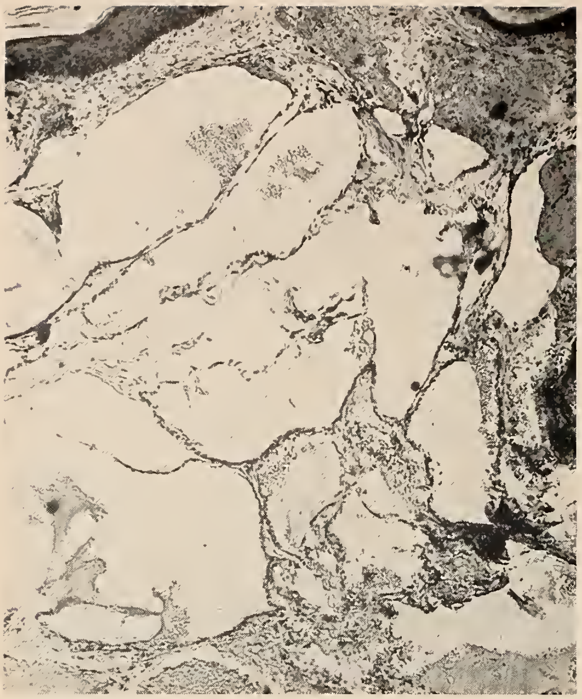

Figure 4.—Hematoxylin- and eosin-stained section (reduced from × 60). A cavernous hemangioma with involvement of the entire cutis. The vascular spaces are lined by a single layer of endothelium. Thrombi are seen in the lower portion of the section.

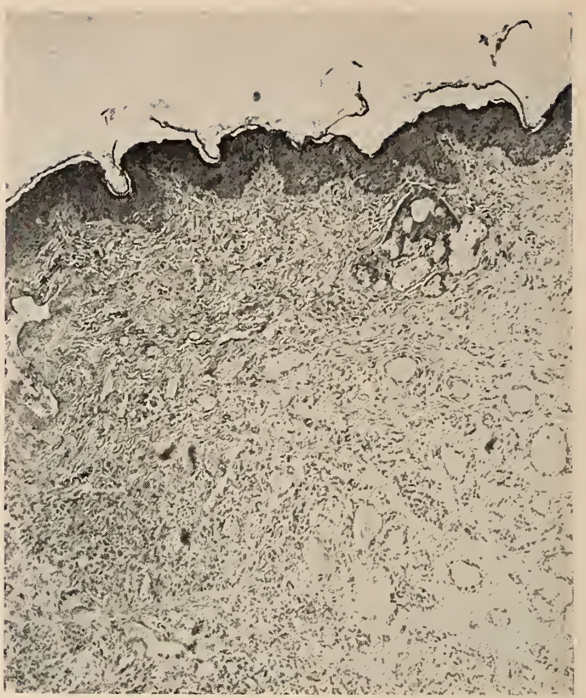

Figure 6.—Hematoxylin- and eosin-stained section (reduced from × 60). A hypertrophic capillary hemangioma (strawberry type). Numerous capillaries and cellular masses involving the entire cutis.

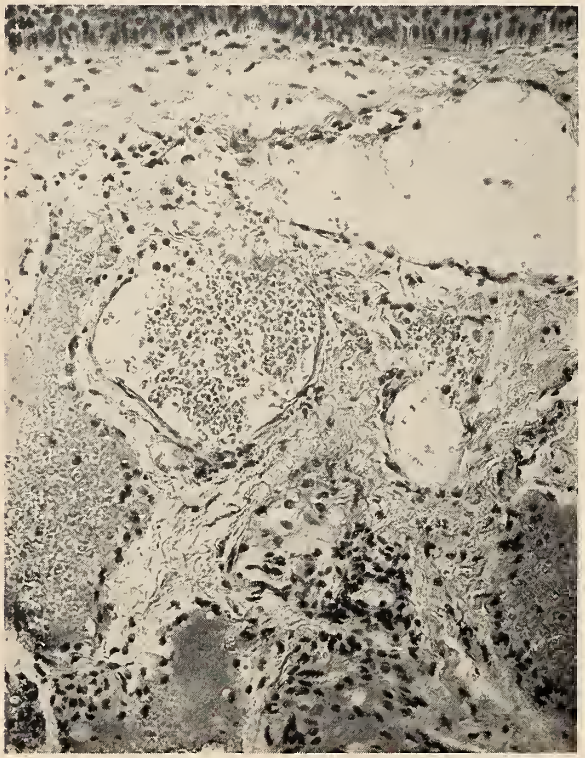

Figure 5.—Hematoxylin- and eosin-stained section (reduced from × 220). A higher-powered magnification of Figure 4. The endothelium is one layer thick and is flattened along the vascular lumen.

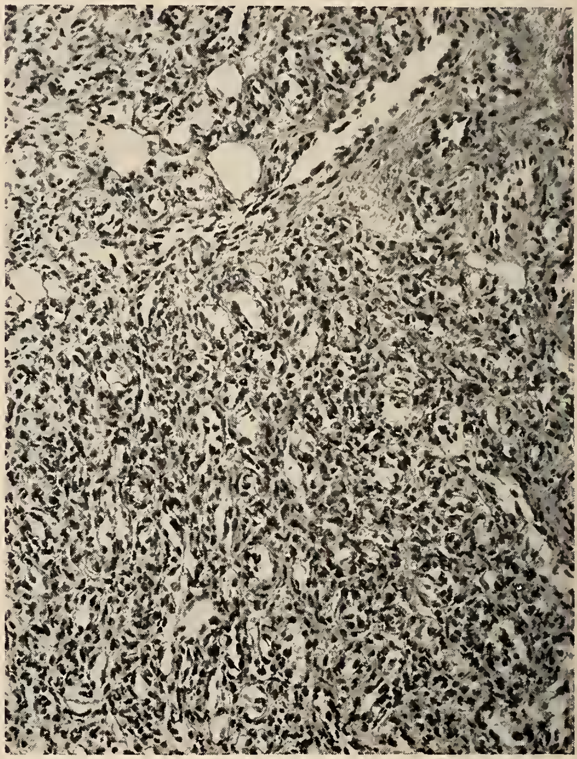

Figure 7.—Hematoxylin- and eosin-stained section. Mature capillaries adjacent to immature capillaries and solid cords of endothelium are seen. The immature endothelium consists of large globular hyperchromatic nucleated cells with vacuolated cytoplasm.

Classification of Hemangiomas (Arterial and Venous)

ECTATIC		HYPERPLASTIC
Capillary (Spider Bursts)	Larger Vessels	Capillary (Strawberry Type)
Acquired:		
1. Liver disease	1. Mechanical: Varicose veins	1. Infectious: Pyogenic granuloma
2. Pregnancy	2. Inflammatory disease: Acrodermatitis chronica atrophicans	2. Traumatic: Sclerosing angioma Hemangioendothelioma
3. Traumatic	3. Traumatic arteriovenous anastomosis	
Congenital:		
1. Nevus araneus	1. Cavernous hemangioma	1. Hypertrophic capillary (strawberry birthmark)
2. Nevus flammeus (port-wine)	2. Systematized angioma unius lateralis	2. Hemorrhagic sarcoma
	3. Racemose or cirsoid	3. Hemangiosarcoma

6 and 7). There is a delicate tissue stroma between these endothelial walls. There are solid cords of endothelial cells adjacent to the well formed capillaries. In some of these solid cords, vacuolization of the endothelial cells, with a tendency toward canalization of the solid cords, may be observed. The endothelial cells are large and have large globular nuclei whose long axis is vertical to the long axis of the vessel walls. The large size of the nuclei and the vacuolization of the cytoplasm together with the presence of solid cords of endothelial cells is indicative of the immature hyperplastic nature of the lesion. Deeper areas in the cutis contain the more mature and ectatic blood vessels very suggestive of cavernous hemangioma.

THERAPY

As is indicated by the histologic structure of mature endothelium of the capillaries in hemangiomas simplex and cavernous hemangiomas, many therapeutic means that will affect these structures will also affect the adjacent structures as well as the overlying skin. In this category, except for the spider nevus which can readily be destroyed by electrocoagulation or electrolysis, ectatic capillary angiomas of port-wine type are best left alone.

Cavernous hemangiomas and hypertrophic capillary hemangiomas are difficult to differentiate, especially when they occur together. Clinically and histologically it is difficult at times to differentiate pyogenic granuloma (infectious hemangioma) in infants from hypertrophic capillary hemangioma (strawberry birthmark). This confusion is further increased by the fact that hemangioendothelioma may resemble both of these two conditions. Thus, a vascular hyperplasia of congenital origin may be simulated by one of infectious origin as well as by one of neoplastic origin.

Nodular subepidermal fibrosis is occasionally designated as a sclerosing angioma (Figures 8, 9 and 10). This is based on the premise that the vascular origin and structure of the lesion are indicated by stain showing the reticulum arrangement around the vascular core of the lesion. It could be the prototype for the neoplastic hemorrhagic sarcoma of Kaposi which shows proliferation of the same elements: blood capillaries and connective tissue. Not infrequently early lesions of Kaposi's sarcoma are diagnosed as hypertrophic capillary hemangioma or even as pyogenic granuloma by clinicians and pathologists. Auken,[1] in a report on progressive multiple angiomas, cited a case in which the lesion was erroneously diagnosed as incipient hemorrhagic sarcoma of Kaposi. Frequently pyogenic granulo-

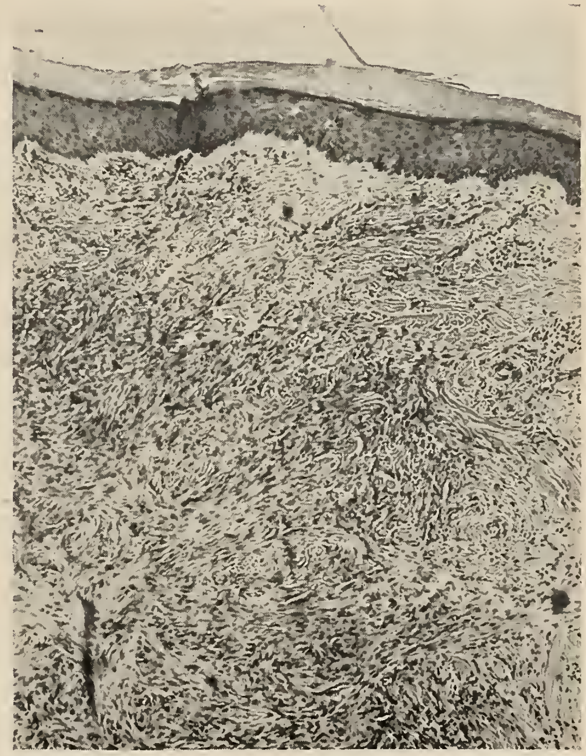

Figure 8.—Hematoxylin- and eosin-stained section (reduced from × 60). Sclerosing hemangioma involving the middle and lower cutis.

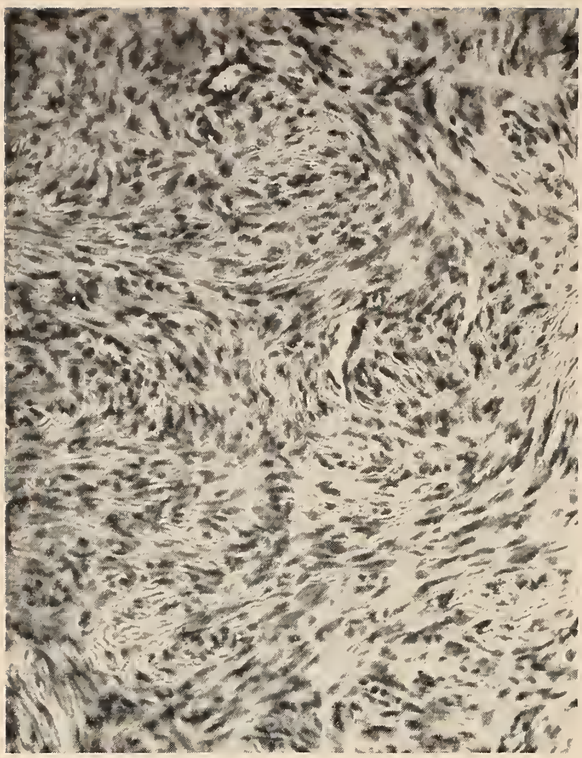

Figure 9.—Hematoxylin- and eosin-stained section (reduced from ×220). The fibrotic fasciculi surrounding capillary spaces in which the endothelium protrudes in the vessel lumina.

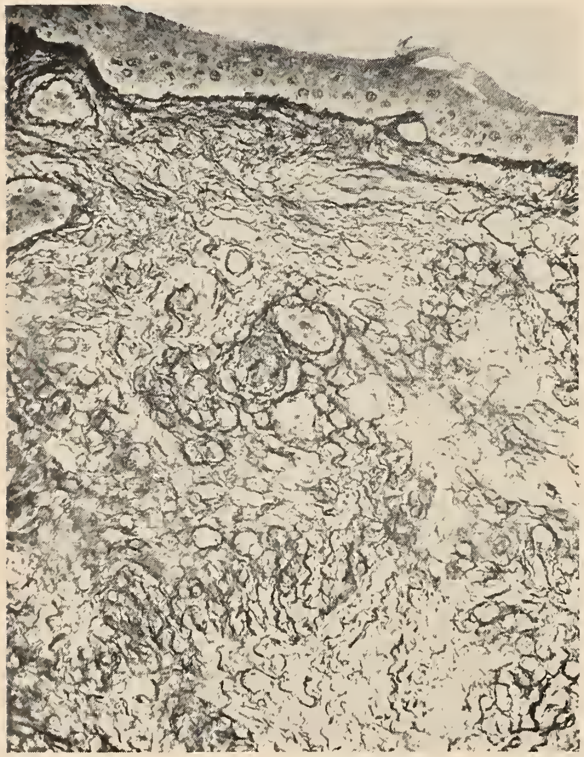

Figure 10.—Reticulum stained section (reduced from × 220). Sclerosing hemangioma with the reticulum arranged around the vascular core of the lesion.

mas, sclerosing angiomas, and lesions of Kaposi's sarcoma are removed after they have been diagnosed clinically as melanoma. Ewing and Powell[3] reported that in 8 per cent of a series of cases in which pigmented skin lesions were removed upon clinical diagnosis of melanoma, the lesions were later proved to be sclerosing angiomas.

Hypertrophic capillary hemangiomas are known to undergo spontaneous regression on occasion, either due to the tumor's own growth shutting off its blood supply or some minute trauma causing necrosis of the embryonic endothelial cells, which rapidly undergo fibrosis. This reaction can at times result in ulceration and severe hemorrhage.

Ectatic hemangiomas of capillary nature (except for those appearing during pregnancy) and cavernous hemangiomas may reach a certain size and then grow no more, or they may become progressively larger, in some instances until they are inoperable and result in death.[5] In some instances small cavernous hemangiomas have been permitted to grow until they were not only unsightly but also interfered with function, as in the case of a 14-month-old child with cavernous hemangioma of the upper lip that interfered with eating.[4] Hemangioendotheliomas also sometimes have been permitted to grow until major procedures were necessary. It is necessary, therefore, to begin treatment as soon as possible. Costello[2] stated that the best results were obtained when treatment was begun before the patient was three months of age. The younger the lesion, the smaller it is and the more sensitive to treatment. The possibility of malignant metaplasia of hemangiomas must be kept in mind, for untreated hemangiomas of bone may become malignant in later years.

Injection therapy of cavernous hemangiomas, whatever be the sclerosing fluid, is at times necessary for lesions on the tongue and in the nasal sinuses. It has also been advocated by Pack and Miller[6] as a preoperative procedure in cavernous hemangiomas to reduce hemorrhage at operation. Injection of a cirsoid hemangioma with sclerosing solution and similar therapy for the dilated veins of acrodermatitis may cause necrotic ulcers. Injection therapy of hemangiomas does not necessarily require intraluminal injection. It is at times safer and just as effective to inject the sclerosing solution into the perivascular spaces, thus setting up an inflammatory process which causes fibrosis and resulting obliteration of the endothelial spaces by the sclerotic connective tissue.

The only objection to the injection therapy is the temporary indurated and tender mass which it creates and which is at times quite alarming to the physician and to the parents of the patient. Advantages of the injection therapy are that it eliminates the necessity of damaging the overlying skin and it can be used for both cavernous and hypertrophic capillary hemangiomas.

Ectatic congenital capillary hemangiomas of diffuse nature ("port-wine stain") are best left alone. The abrasive therapy advocated by some physicians may cause development of a silica granuloma later. The tattooing of pigment into the spaces between the epidermis and the dilated capillaries has not as yet given the satisfactory results hoped for. Single ectatic capillaries are best destroyed by either electrolysis with monopolar Oudin current or microcautery. Punching the lesion out with a cutaneous punch one or two millimeters in diameter and pulling the edges of the wound together with fine suture is also an effective method.

Radiation with either radium or roentgen ray is the simplest, least difficult and least painful of the therapeutic measures that can be used to treat hypertrophic capillary hemangiomas (strawberry birthmark). Use of radium plaques, or tubes, properly filtered and administered by one who has had experience with them is the treatment of choice in lesions that do not lie above vital areas. Radiation therapy is contraindicated for telangiectatic hemangiomas because the dosage required to cause sclerosis is sufficient to cause radiation sequelae such as keratosis, atrophy, and carcinoma. Radiation therapy is also contraindicated for lesions over bony epiphyses, breasts, and genitalia because of the inhibition of growth of bones and breast and the sterilizing effect of the rays on the genitals. Lesions of the scalp should be treated very cautiously with radiation therapy because of possible permanent alopecia.

Superficial coagulation with solid carbon dioxide, liquid air and even microcautery are very satisfactory for superficial hypertrophic capillary hemangiomas. Surgical excision is advocated for all lesions unsuccessfully treated by other more conservative procedures and where there is active growth. Surgical operation is the only method of treating systemic hemangiomatosis and cirsoid hemangiomas.

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ACKNOWLEDGMENT

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Vitamin U Therapy of Peptic Ulcer

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• *Vitamin U, administered as raw cabbage juice to 100 patients with peptic ulcer, was apparently effective in promoting the rapid healing of uncomplicated peptic ulcers. The evidence of therapeutic benefit was (1) the rapid relief of the symptom, pain, without the use of any set plan of symptomatic treatment, and (2) ulcer crater healing time (determined roentgenographically) considerably shorter than in groups of cases, reported in the literature, in which "standard" types of diet and drug therapy were employed.*

RESULTS of a number of animal experiments carried out in the medical research laboratories at Stanford University School of Medicine in the past ten years[1, 2, 3, 4] indicate that a dietary factor plays some role in the etiology of peptic ulcer. Certain raw foods, particularly green vegetables, contain some substance, termed vitamin U, which prevented the development of histamine-induced peptic ulcers in guinea pigs. This substance is readily destroyed by heat, and may be rapidly destroyed by oxidation. The therapeutic use of vitamin U in the form of cabbage juice in the treatment of a group of thirteen patients was reported in 1949,[5] and a further report dealing with the clinical use of this form of therapy was made in 1950.[6] The present report consists of an analysis of the therapeutic effect of vitamin U in cabbage juice on the healing of peptic ulcer in 100 patients (including the 13 originally reported upon) who were treated in a period of two and one-half years.

SELECTION OF PATIENTS FOR TREATMENT

At first only patients were accepted for this form of treatment who had a readily demonstrable ulcer crater and who were free from such complications as recent bleeding, pyloric obstruction and long-standing symptoms suggesting extensive cicatricial changes. Since many patients who did not meet these qualifications requested cabbage juice therapy, it was decided to accept all patients for vitamin U therapy who had a clearly established diagnosis. In accepting a number of patients with complications, it was recognized that some patients in this group might not be expected to respond satisfactorily to any form of medical therapy, and that operation might be necessary.

Also it was obvious that improvements in the patient's condition as measured by the time required for an ulcer crater to heal as observed in serial x-ray studies[5] would not serve as a satisfactory criterion in all cases because a crater in the duodenum could not always be demonstrated clearly and the progress of a complicated case could not always be followed a sufficient length of time to judge crater healing time accurately. Consequently in a number of cases symptomatic relief of ulcer pain had to serve as the sole criterion of improvement.

As most patients were hospitalized during the first seven to fourteen days of treatment, bed rest alone may have contributed to the development of well-being in some instances. Each patient received only cooked (heated) food in the diet during the period of experimental therapy[6] and no routine standardized administration of drugs was permitted. However, in the first few days of treatment, drug therapy was used when absolutely necessary for relief of pain or restlessness. Relief of abdominal pain by vitamin U therapy was only judged to have occurred when the use of symptomatic drug therapy was not required and when pain no longer appeared spontaneously. All patients were required to take one quart of fresh raw cabbage juice daily, in four or five divided feedings,[6] or a dehydrated form of cabbage juice. Fifteen patients received the dried material which was prepared by lyophilization and assayed for antipeptic ulcer potency.[4] It was mixed with enough water (one-half the original bulk of fresh juice) to permit complete solution. A few patients were unable to take large amounts of fresh juice consistently. Juice therapy was continued until pain was relieved and the ulcer crater as observed in x-ray studies (when available) had completely disappeared. In some instances the period of therapy was one week, in most 10 to 21 days.

Whenever possible x-ray examinations to determine ulcer crater healing time were carried out at

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[*Dr. Cheney's manuscript is not printed here in entirety. Tables giving details of clinical and roentgenographic observations in each of the 100 cases were deleted to save space. The more detailed information will be included in reprints of the article, available from the author.*]

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7- to 14-day intervals. However, some patients with clearly demonstrated ulcer craters declined follow-up x-ray studies when they were symptomatically relieved. If an interval of a month or more elapsed between x-ray examinations, it is obvious that crater healing time could not be accurately calculated. Ideally x-ray studies should be done weekly. In all cases, blood examinations (cell count, Kahn test and sedimentation rate determination), stool examination, and fractional alcohol gastric analysis were carried out. Some of the patients with gastric ulcer were also examined with a gastroscope.

ANALYSIS OF 100 PATIENTS

All but five of the 100 patients either were under the care of the author or were treated under his direction and all records were available to him. There were 74 men and 26 women 21 to 78 years of age and the average age was 49.5 years. Seventy-two patients were hospitalized for treatment and 28 were treated at home. Twenty-five patients treated at home were ambulatory, the majority of them working.

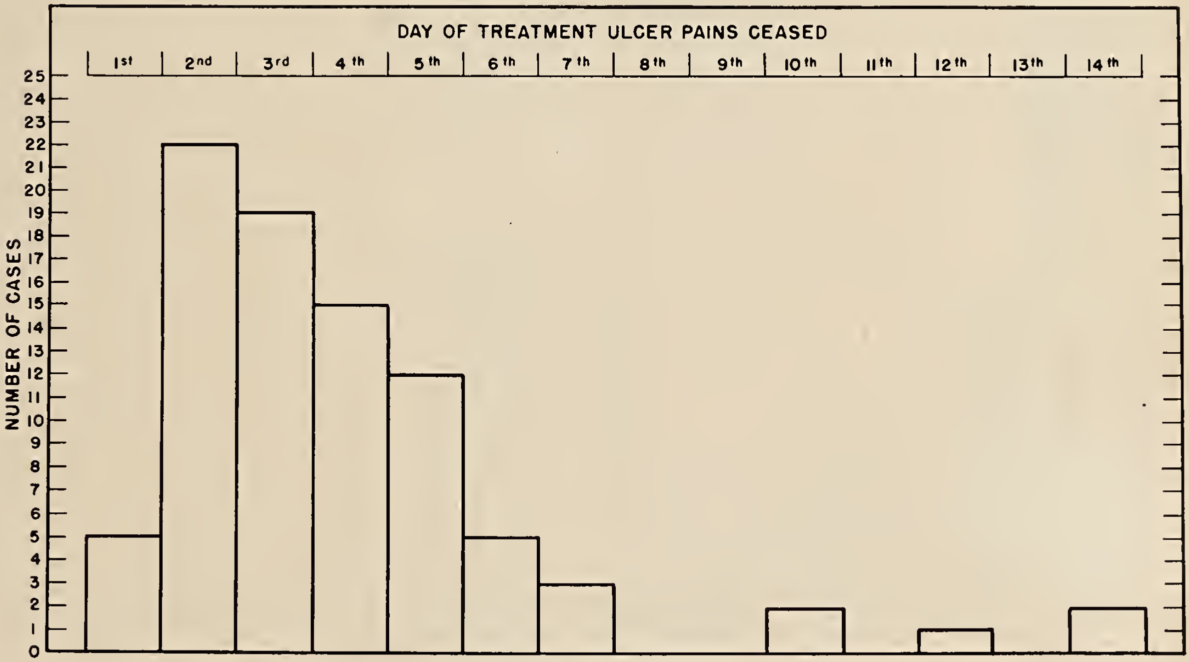
The location of the ulcer was in the stomach in 25 cases, in the duodenum in 71 cases and in the jejunum (marginal or submarginal) in 4 cases. In 55 cases there were enough satisfactory roentgen films to permit determination of ulcer crater healing time. In 17 of these cases the lesion was in the stomach, in 36 in the duodenum and in 2 in the jejunum. In one case there was a peptic ulcer crater in both the stomach and the duodenum. In 17 cases in which the diagnosis of duodenal ulcer was established by clinical and x-ray observation no constant ulcer crater outline could be demonstrated. Ulcer craters that were visualized by x-ray in profile as a niche were measured in their greatest diameter and in their maximum depth. Ulcers that could be visualized only *en face* were measured in their greatest diameter. Lesions varied in diameter from 0.2 cm. to 3.0 cm. and in depth from 0.3 cm. to 1.5 cm.

RESULTS OF VITAMIN U THERAPY

Appraisal of improvement was based first on relief of pain, and second on ulcer crater healing time. As eight patients were pain-free at the time therapy was begun (these patients had ulcer craters clearly visible by x-ray examination), there were 92 patients suitable for study of pain relief. Eighty-six of them (95.9 per cent) were pain-free within two weeks, and 81 per cent of the total were symptom-free within one week. The day of pain relief for the 86 patients is shown in Chart 1. Sixty-one of the patients were pain-free within four days. The average time from beginning of therapy to relief of pain in the 86 cases was 3.92 days.

In 19 cases no ulcer crater could be clearly demonstrated. In 17 of those cases a diagnosis of duodenal ulcer was established and in 2 a diagnosis of jejunal ulcer. Twenty-six of the 81 patients with clearly demonstrable ulcer craters could not be suf-

CHART 1



Time of relief of pain after beginning of therapy in 86 of 100 patients with peptic ulcer treated with raw cabbage juice. Six were unrelieved (see text). Eight did not have pain at time therapy was started.

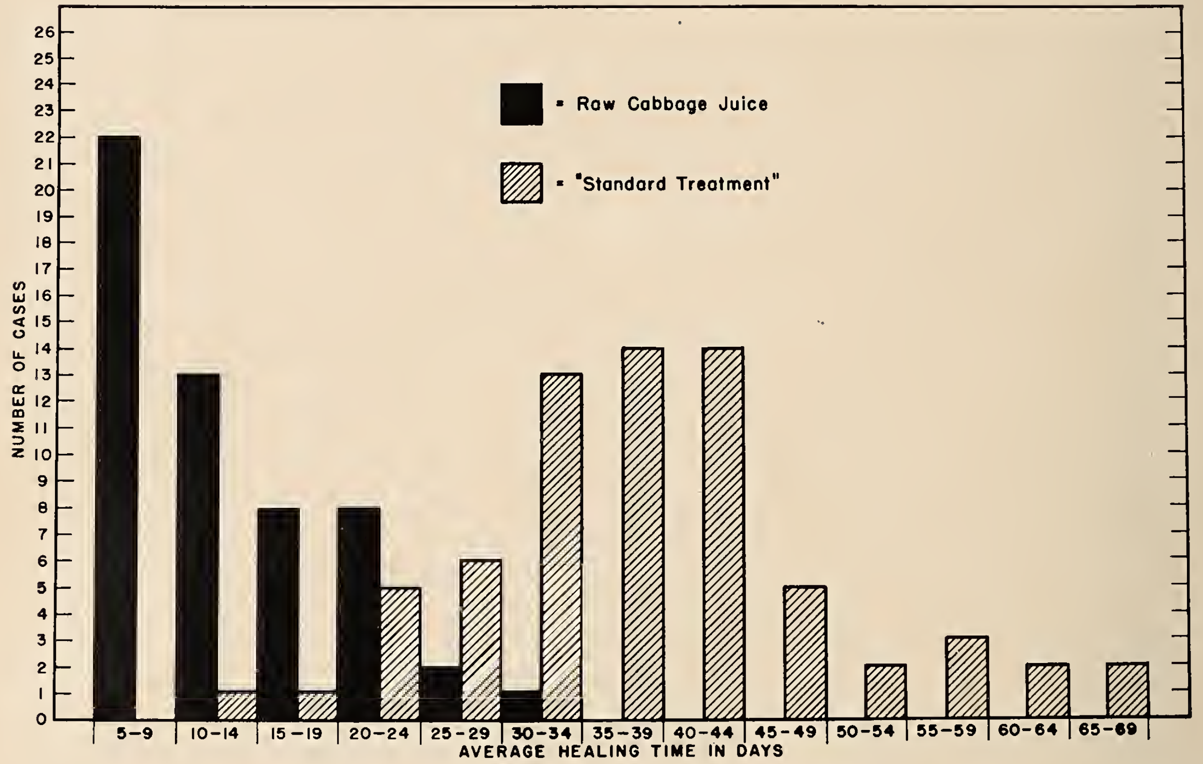
ficiently well followed to determine crater healing time. In the remaining 55 cases crater healing time was determined.

In the 17 cases of gastric ulcer in which healing time was determined, it varied from 6 to 27 days; the average time was 14 days.

As to the eight cases in which crater healing time could not be calculated by x-ray examination: Three patients had no follow-up x-ray study after 6 days, 7 days, and 21 days of therapy. However, the first and second of the patients were operated upon promptly and in both instances after gross and microscopic examination the gastric ulcers were described as benign and healing. The third patient was symptom-free after the third day. In five cases there was no significant reduction in size of the ulcer after 5, 8, 9, 10, and 29 days of treatment. One of the five patients had polycythemia vera, and, in examination of sections of the stomach in the region of the ulcer crater removed at operation, extensive thrombotic changes of the vessels which apparently reduced the blood supply to the involved area were noted. Inadequate circulation could easily have retarded healing. In another case, in which operation was done on the tenth day after treatment was started, a large benign ulcer had perforated into the pancreas. In a case in which the ulcer crater was 1.0 cm. by 0.3 cm., the lesion was observed to be healed when x-ray examination was carried out three months after treatment ceased, but as the last preceding roentgen study had been done on the sixteenth day of treatment, the crater healing time could not be estimated. It was somewhere between one and four months. A patient in whom no reduction in the ulcer niche was observed upon x-ray examination after eight days of therapy, was operated upon on the eleventh day and at that time epithelialization of the ulcer was noted. A patient with a pyloric lesion and partial obstruction was under direct observation for only ten days, but was known to be improved and working one year later.

Although there were 54 cases of duodenal ulcer with crater in the series, only 36 of them were suitable for analysis of crater healing time (Chart 2), including one case in which the crater was no longer visible in the only follow-up x-ray study, 32 days after the beginning of therapy. Another case was not included because the patient was chronically ill and had a lesion in the pancreas. Although no definite crater was observed in this case at an x-ray examination after 72 days of therapy, upon subsequent x-ray examination six months later a large crater in

Chart 2



Crater healing time in 54 cases of peptic ulcer treated with raw cabbage juice, compared with healing time in 68 cases (reported in the literature) in which "standard treatment" was given.

the duodenal cap was noted; and, at operation, penetration of the ulcer into the pancreas and a localized small chronic pancreatic abscess were observed. For the 36 cases of duodenal ulcer in which healing time was determined, it varied between 6 and 32 days and averaged 12.9 days.

In seven of the seventeen cases in which crater healing time could not be calculated there was no satisfactory follow-up x-ray examination. Six of the seven patients felt well and declined further x-ray study. Improvement was noted in four patients who were last examined by x-ray after nine to ten days of treatment, but the crater was still present. All four were symptom-free. One patient who still had an ulcer crater eighteen days after therapy was started was operated upon, and a duodenal ulcer perforating into the pancreas was observed. In two cases in which ulcers still were present, as determined by roentgen study after ten days of treatment in one instance and after 21 days in the other, the patients apparently had not been adequately treated: they had received a preparation of lyophilized cabbage juice which, when it was fed to guinea pigs that received repeated injections of histamine,[4] gave little prophylactic protection against peptic ulcer. Late follow-up studies of three patients with unhealed ulcers could not be obtained.

Seventeen patients with duodenal ulcer without crater all had a "typical deformity" of the duodenal cap with tenderness and irritability of the cap. Three of them were pain-free at the time they were treated, but 12 of the 14 with pain became symptom-free. The two who did not were treated for such short periods (three days and five days) that satisfactory therapeutic results could hardly be expected. In five cases no follow-up x-ray studies were made, including the two cases mentioned in the preceding sentence. In the other three of the five cases symptomatic relief occurred within two days of the beginning of cabbage juice therapy. In eight of twelve cases, improvement in the "indirect findings" of duodenal ulcer was noted in follow-up roentgen studies, and in four there was no change. Two of the latter four patients were originally pain-free, and the other two became pain-free during therapy. As far as can be judged from the data presented, this group of seventeen patients did as well as could be expected from any known form of medical treatment.

In considering the therapeutic results in the four cases of jejunal ulcer, it would appear that this type of peptic ulcer would benefit from vitamin U therapy. A favorable result might be expected on the basis of the generally accepted concept that the mucosa of the small intestine (jejunum and ileum) is lacking in some factor which normally affords a high degree of resistance to acid-pepsin digestion of the gastroduodenal mucosa. This expectation seems to have been borne out, as the average crater healing time in the two cases of jejunal ulcer adequately studied by x-ray was 10.1 days. The average healing time for the total series of 54 cases with demonstrable peptic ulcer craters which could be satisfactorily followed by periodic x-ray examinations was 13.1 days, or just under two weeks.

DISCUSSION OF THERAPEUTIC RESULTS

The results of treatment of 100 patients with peptic ulcer indicate that therapy with vitamin U in the form of cabbage juice deserves careful consideration and further study. Although an exactly comparable series of cases for a comparative analysis was lacking in the present study, it should be taken into consideration that 84 per cent of the patients treated had had symptoms of peptic ulcer for one month or longer before receiving cabbage juice and that at the time vitamin U therapy was begun nearly all of them were under some form of treatment which had already proven unsuccessful as regards sustained symptomatic relief. A number of the patients, and 21 additional "control patients" that were given "standard" treatment for ulcer had been examined initially by x-ray and again thirty or more days later without demonstrating disappearance of an ulcer crater. Consequently, although ulcer crater healing time could not be accurately calculated in these cases, it could be said that it exceeded one month in all instances, and was considerably longer than the average time of 13.1 days obtained in the series of patients treated with vitamin U.

In considering that the symptom of pain was relieved in 86 per cent of the patients treated with cabbage juice, and that the average length of time from beginning of therapy to relief of pain was four days, it might well be stated that in this series the interval before relief of pain was similar to that which has been reported for almost all other forms of therapy, nearly all of which involve the use of a bland diet, alkalis, sedatives, antispasmodics and, not uncommonly, a variety of old or newly introduced drugs. By that standard alone, the best that could be said for the effectiveness of vitamin U therapy in relieving pain is that it is only as good as many other forms of treatment. However, there is a very important and significant difference. Relief of pain occurred in this series of cases without the continued use of any form of drug therapy and without frequent feedings of food. This is in sharp contrast to experience in the usual series of peptic ulcer cases reported in which the symptoms are obliterated or masked by the frequent and continued use of drugs and food and it cannot be determined when pain would have spontaneously ceased. For example, when Banthine® bromide is used in the treatment of peptic ulcer, pain often is quickly relieved and the patient may remain pain-free during months of Banthine therapy. However, when treatment with this drug is stopped, pain may rapidly recur and a follow-up x-ray examination show that the ulcer crater demonstrated at the onset of Banthine therapy remains unaltered. Symptomatic *relief* of pain by drugs or by food cannot be justly compared to *absence* of pain when no symptomatic treatment is administered. With this difference in mind it would appear that the high incidence of symptom relief which tends to develop rapidly in patients treated with vitamin U is a real and important indication that this form of treatment is effective in promoting the healing of peptic ulcers.

In considering normal standards of ulcer crater healing time, it must be stated that so far an insufficient number of detailed x-ray studies of large series of cases of peptic ulcer have been published. The control series of 68 cases used for a comparison with the present series of 54 cases (Chart 2) was published in 1946.[7] In the total series of 69 cases studied there were six cases of gastric ulcer with an average healing time of 42 days, and 63 cases of duodenal ulcer (one of these was omitted from the calculations because of a greatly prolonged healing time) with an average healing time of 37 days. Chart 2 clearly shows a greatly shortened healing time for the patients treated with vitamin U; and the rapidity of healing is emphasized when the average healing times of 14 days for gastric ulcer and 12.9 days for duodenal ulcer are compared with the 42 days and 37 days cited from the literature. In 1947 a large series of cases of benign gastric ulcer was reported with a healing time similar to that reported in 1946.[8] In a recently published report, ulcer crater healing time was completely studied in 31 cases of gastric ulcer,[9] and the time was shown to have varied between 2 and 15 weeks, with only eight cases in which there was complete healing in less than 4 weeks. The average healing time for the 31 cases was not stated, but from the data presented it can be calculated as 6.93 weeks. This healing time of slightly less than 7 weeks is comparable to that reported by Cummings and co-workers[7]—42 days (6 weeks).

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Hypothalamic Dysfunction

A Review of Experimental and Clinical Observation of Cardiac and Renal Aspects

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• *The nuclear cell masses of the hypothalamus act as autonomic regulators for visceromotor function. Through the correlation of impulses arising in or about the hypothalamus with the changes in cellular chemistry, there is provided, by mediation of the endocrines, a balanced control of water metabolism, renal function and cardiac action.*

Derangement of hypothalamic regulation causes specific clinical syndromes described by the general term "diencephalohypophyseal dystrophy." Cardiac abnormalities attributable to hypothalamic dysfunction include alterations in rate and various arrhythmias. Alteration in renal function includes hematuria, polyuria or relative anuria, and specific effects on electrolyte and nitrogen output.

THE HYPOTHALAMUS in man is about the size of the distal phalanx of the thumb—less than a cubic inch—yet without it man cannot exist, for it is essential in water metabolism, renal function, and cardiovascular dynamics. Lying between the cerebral peduncles, it includes the ventral walls and part of the lateral walls of the third ventricle and comprises the nethermost portion of the diencephalon. Within it are some fifteen nuclear cell masses, which, for purposes of convenience, may be classified into three groups: the anterior, in relation to the optic chiasm, the middle or tuberal nuclei above the hypophysis, and the posterior group which includes the mammillary bodies.

The middle group, which is the only one that changes much in evolution, is much less complex in adult humans than in mammals of the lower orders (or in human embryos), for in man the elementary instincts and vegetative needs are subordinate to the cortical development necessary for thought and special skills and movements. In adult humans there are two nuclei in the middle group,[19] whereas in rabbits, for instance, there are 30.

A beginning toward understanding of the role played by the hypothalamus in vegetative functions was made when Rokitansky[53] more than 100 years ago noted an association between hypothalamic damage and visceral changes. He observed a relationship between conditions affecting the base of the brain and gastric ulceration. At the turn of the century further clinical observations had to do with the development of Froelich's syndrome in persons with sleeping sickness.

In the first twenty years of this century, experiments with artificial stimulation somewhat like the diabetogenic third ventricle piqure done earlier by Claude Bernard were carried out. Karplus and Kreidl,[32-35] using electrical stimulation of the lateral hypothalamus, provoked changes in blood pressure and pulse rate, sweating, and pupillary dilation. Cushing removed the pituitary and noted that adiposogenitalism developed. Bard[1] related sham rage to the posterior hypothalamus, confirming that the hypothalamus is, among other things, a way-station for autonomic reactions accompanying the expression of emotions.

The results of early experiments with electrical stimulation were subject to criticism on the ground that the subjects had been anesthetized. More recently these objections were overcome by Hess[22] who, in a series of 3,500 experiments covering all diencephalic areas in 350 cats, used only light anesthesia when implanting the electrodes and rigidly fixing them to the skull, then waited until a half hour after the subjects had returned to consciousness before applying stimuli.

As to the clinical applicability of experimental data, as Brouwer[6] pointed out, experimental stimulation, being acute, brings into play accessory functional neuron chains. Clinical syndromes, on the other hand, are generally slow in evolution, and when a hypothalamic area is gradually destroyed, at least partial compensatory replacement of function may be expected on the part of the cortical vegetative centers and the medullary and inferior ganglionic reflex centers.[43] Thus the slowly developed clinical syndrome may not entirely match the phenomena swiftly induced by experimental stimulation.

The hypothalamus has been termed a "central

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ganglion" and, by Cushing and others, the cranial terminus of autonomic function. Both sympathetic and parasympathetic effects are mediated by hypothalamic nuclei. The posterior hypothalamus may be regarded, in this sense, as the rostral station for sympathetic or so-called thoracolumbar function, and the anterior hypothalamus as the station for parasympathetic, or craniosacral, integration. There are, however, cortical connections for some autonomic functions. As with sympathetic and parasympathetic fibers in end organs, the two areas work by reciprocal functioning. For example, the posterior hypothalamus has a vasoconstrictive function for conservation of heat, while the anterior portion promotes sweating and flushing to dissipate heat. The anterior hypothalamus initiates intestinal hypermotility and hyperphagia; the posterior, intestinal inhibition. Thus, the visceral effect of damage to the hypothalamus or of irritation of it by a lesion or toxin depends to some extent upon whether it is the anterior or the posterior portion that is involved.

The endocrines may be brought into action to a greater or lesser extent in hypothalamic phenomena. For example, hypermetabolism may be caused with or without thyroid participation.[7] Sex functioning is related particularly to the anterior hypothalamus, which has fibrous connection with the anterior pituitary. Upon this basis, Findley[12] theorized on a "stress" state of eosinophilism with secondary adrenal change. Endocrine participation appears to be much more important in water metabolism and renal function than in cardiac regulation.

RENAL ASPECTS

It is well established that the supraoptic and paraventricular nuclei of the anterior hypothalamus, the supraopticohypophyseal tract and the posterior hypophysis form a unit in the causation of diabetes insipidus.[13, 21] Verney[59] postulated that there are receptors in the supraoptic area that are responsive to osmotic changes in the blood stream. Spatz[54] and Hild[25] noted evidence that the neurosecretory ganglion cells of the preoptic and the other nuclei produce the antidiuretic hormone and that it is then transported along the connective tracts to the posterior pituitary for storage. Antidiuretic properties are present in extracts of both the hypothalamic and the hypophyseal elements of the unit, and injections of pituitrin or Pitressin® will compensate for diabetes insipidus caused by lesions in this unit. Diabetes insipidus may, however, occur as a result of lesions in the mammillo-infundibular nucleus alone, and in such instances the diuresis is not affected by injection of posterior pituitary extracts.[10, 42] In some cases diabetes did not develop even when the supraoptic nuclei were completely destroyed.[6]

In man, removal or destruction of the anterior hypophysis abates or prevents the diabetes insipidus that otherwise would result from injury to the neurohypophysis.[20] In experiments it has been observed that if an occluding clip is placed on the stalk of the neurohypophysis, diabetes insipidus results. Then if the anterior pituitary or the thyroid gland is removed, diabetes ceases; and if desiccated thyroid substance is given, it recurs.[41] From these observations it has been conjectured that the hypothalamus has a dual function in control of water balance by way of the endocrine system; that the neurohypophyseal system produces antidiuretic effect with thyrotropic hormone, and the anterior lobe produces diuretic effect with adrenocorticotropic hormone.[29] Thyroid substance is diuretic in action and the adrenal cortex may promote diuresis through its effect on the electrolytes of the blood stream.[48] A few nerve fibers enter the anterior lobe of the hypophysis, some from the posterior hypothalamus roundabout by way of the carotid plexus, and a few perhaps directly from the anterior hypothalamus. It has been reported that these nerve fibers influence the thyroid and the adrenal cortex by way of the chromophil cells of the anterior lobe. Heinbecker[23] observed that destruction of the supraoptic-paraventricular nuclei resulted in loss of the basophil cells of the anterior lobe, which gave rise to acidophilism and consequently to adrenocortical preponderance and hypothyroidism.

In studies recently carried out by the author in association with Goodman and Buschard[64] the renal function of patients undergoing routine ventriculography and encephalography was observed. The irritation of the central nervous system by the injected air caused not only protracted antidiuresis but also a reduction in the rate of electrolyte output. Thus, if posterior pituitary action alone were involved, these observations would be at variance with those of Starling and Verney[55] and of Van der Velden[57] who, in animals and man, determined that chloride output was not affected by giving pituitrin. In earlier experiments with animals, Weinberg and Marx[65] observed that denervation of the kidneys did not affect the antidiuresis or the lowered output of chloride and nitrogen that was brought about by the injection of an osmotic stimulus into the cerebral ventricular system, an observation that agrees, in this respect, with that of Starling and Verney. Perhaps it can be concluded that the neurohypophysis does not act alone in controlling electrolyte output by the kidneys and that other mechanisms contribute. Evidence of relationship of the hypothalamus to the kidney by the way of adrenocortical regulation of circulating electrolytes was summarized by Hume[27, 28] and Findley.[12]

Probably of greater significance in the work of the author and co-workers was the observation that great numbers of erythrocytes appeared in the urine during the height of the antidiuresis that occurred when air was injected into the nervous system. Evidence that a hypothalamic mechanism initiates renal glomerulitis and hematuria has been noted by other observers also: Brobeck and co-workers[4, 5] and Kennedy[36] reported similar observations in experimental studies on relationship of hypothalamic action to obesity. Renal vascular change after peripheral nerve stimulation was first studied by Goll in 1854.[17] Neurogenic renal cortical ischemia was observed in experiments by Trueta[56] and other investigators.[26] It was produced by stimulation of the hypothalamus anterior to the mammillary bodies. Similar ischemia with necrosis is sometimes observed clinically also.

The path from the hypothalamus to the kidney need not be direct. The author and co-workers noted hematuria upon stimulation of the hypothalamus even in animals with denervated kidneys. There is reason to believe that a hormone, either posterior pituitary or adrenal, is an indirect agent. (As yet there is no satisfactory delineation of the cause of nephrosclerosis or of some cases of glomerular nephritis.)

In considering the clinical syndromes that are generally regarded as etiologically related to hypothalamic dysfunction, it is of value to note that the presence (or absence) of diuresis is important in the differentiation of true anterior hypophyseal cachexia and Addison's disease from myxedema. Both hypophyseal cachexia and Addison's disease, like diabetes insipidus, are characterized by a delay in output of water that is ingested in large amount for test purposes, whereas in myxedema the diuresis is unimpaired. Normally, almost all of 1 liter of water should be excreted in three hours. Polyuria in adrenocorticalism derives from hypernatremia with secondary polydipsia rather than from action on the renal tubules as in diabetes insipidus.

It is assumed that there is in the nervous system an area, as yet not identified, that regulates circulating blood volume and shifts of fluid among the various organs and capillary beds. Undoubtedly such a mechanism, as well as the centrally initiated antidiuresis and electrolyte disturbance determined in observations previously mentioned,[64] plays a part in congestive heart failure. This aspect was discussed by Friedberg,[14] who concluded that the posterior pituitary antidiuretic hormone is not a primary factor in the edema of heart failure and that there is only suggestive evidence that the retention of sodium and water in adrenocortical syndromes is of significance in this clinical condition.

Diencephalic autonomic epilepsy may be accompanied by albuminuria and cylindruria.[11] Often this condition follows tumors or lytic lesions in the thalamus or, as in Penfield's early case, in the foramen of Monro, indicating remote activation of hypothalamic function. Cushing's hypothalamic syndrome and similar craniopathic conditions affecting metabolism cause no definite alteration in renal status except for diabetes insipidus in some cases. Most cases of diabetes insipidus occur secondary to tumors, Hand-Schuller-Christian disease, Boeck's sarcoid,[16] trauma,[8] syphilis, pellagra, or encephalitis.

CARDIAC ASPECTS

In addition to peripheral reflex and endocrine changes of hypothalamic origin that have indirect effect on the heart, the hypothalamus possesses a mechanism which directly affects the cardiac musculature.

The link between the brain—that is, emotions—and the heart has been observed for many centuries. William Harvey in 1628 stated: "A mental disturbance provoking pain, excess of joy, hope or anxiety extends to the heart where it affects its temper and rate." In 1747 the French cardiologist Senac made what was perhaps the first observation of the use of the Peruvian cinchona bark in clinical tachycardia, yet from that time to this century clinicians tended to regard arrhythmia as an intracardiac matter. In fact, hardly 100 years ago did Weber and Ludvig first describe the cardioinhibitory and cardioaccelerator nerves. Wenckebach, as recently as the First World War, in commenting upon the observation of extrasystoles in an Austrian army officer, called attention to the relationship between that condition and emotion. Numerous psychogenic and central nervous system disorders were listed by Orgain, Wolf and White[46] as causes of arrhythmia.

In 1875 Shiff and Danilewsky[9] noted that tachycardia occurred when stimulus was applied to the frontal lobe of the brain. The previously mentioned work of Karplus and Kreidl followed in 1913, and at about the same time Levy,[38] carrying out experiments that were prompted by the death of obstetrical patients from heart failure while in anesthesia, produced extrasystoles and paroxysmal ventricular tachycardia by stimulation of the cardiac sympathetic nerves in lightly anesthetized cats. In 1930 Beattie, Brow and Long[3] identified the principal anatomic nervous pathway concerned with this arrhythmic manifestation. This path is similar if not identical to the path traced by Karplus and Kreidl in the early part of this century as the route of sympathetic pressor and other effects originating in the hypothalamic nuclei (sweating, changes in heart rate, defecation, salivation, pupillary dilation, contraction of the bladder, elevation of blood pressure).

It extends by way of the periventricular system from the posterior hypothalamic nuclei down the medial longitudinal bundle, through the medulla, down the spinal cord to the thoracic sympathetic chain and so to the cardiac nerves. In the periventricular system, relationships are established with the motor cranial nerves for visceromotor function. Beattie, Brow and Long observed that the paroxysmal ventricular extrasystoles induced by posterior hypothalamic stimulation ceased when the medial longitudinal bundle adjacent to the aqueduct of Sylvius was sectioned, or when the stellate ganglion was removed, or when the preganglionic cardiac nerves were sectioned.

The early work of Karplus and Kreidl, who stimulated electrically the lateral wall of the third ventricle, and especially the posterior hypothalamus, lacked precision in comparison with the work of Hess, who pinpointed numerous areas with regard to the relationship of each to pulse rate and blood pressure. Hess noted in experiments that stimulation in the anterior tuberal area caused a decrease in blood pressure and that stimulation in the posterior tuberal area and in the posterior hypothalamus resulted in an increase. When stimulation was applied laterally, changes in heart rate as well as in blood pressure occurred. Stimulation of the lateral preoptic and lateral anterior hypothalamic areas caused a decrease in blood pressure and a slowing of the heart rate. When stimulation was applied in the posterior hypothalamus and at the posterior commissure and entrance to the aqueduct of Sylvius, tachycardia accompanied the pressor effect evoked. White,[66] during ventriculostomy on five conscious humans, stimulated electrically the posterior hypothalamus and observed that tachycardia resulted. Slowing of the heart rate followed stimulation of the medial preoptic area.

By injecting simple alkaloidal and osmotic stimuli into the third cerebral ventricle as a means of exciting the hypothalamus, the various auricular, nodal and ventricular cardiac irregularities were produced.[37, 63] A characteristic electrocardiographic pattern was consistently associated with each injected agent. The phenomena observed could have been produced only by way of both the cardioaccelerator and the cardioinhibitor paths—fibers from both the vagus and the sympathetic trunks extending as far as the ventricular musculature, largely by way of the intracardiac blood vessels.[67, 68]

It is not possible in every instance to determine the extent to which the hypothalamus participates in arrhythmia that is psychogenic or neurogenic. The medulla alone can maintain physiological cardiac action;[2] in fact, the cortex, hypothalamus, medulla, aortic and carotid sinus buffers, sympathetic ganglia and sinoauricular and auriculoventricular nodes all contribute to normal cardioregulation. The nerve pathway carrying the dominant regulatory impulse in any given case may be either above or below the hypothalamus. For example, heart block may change in degree upon inspiration by the patient, or coupled rhythm may follow emotional upset. All the various kinds of arrhythmia have been observed in connection with electric shock applied to the central nervous system in psychiatric treatment.[62]

Other evidence with regard to the role of the hypothalamus in cardioregulation has been noted in observation of patients with traumatic, febrile, and neoplastic lesions in or near the hypothalamus. In a case reported by Lucke,[39] ventricular extrasystoles were associated with a variant of diabetes insipidus. In Penfield's well known case of autonomic diencephalic epilepsy[47] owing to a ball-valve tumor in the foramen of Monro, the autonomic attacks were accompanied by tachycardia and bradycardia. Auricular flutter was associated with the presence of Boeck's sarcoid about the hypothalamus in a case reported by Gjersoe and Kyersulf-Jensen.[16]

Clinical syndromes deriving from hypothalamic dysfunction[10, 18] generally are adequately characterized by the term *diencephalohypophyseal dystrophy.*[31] They include complexes marked by hyper- or hypometabolism, duodenal ulcer, diminished libido, change in skin pigmentation, sleepiness, obesity, and cardiorenal abnormalities. Specific conditions of this kind are Froelich's adiposogenital syndrome, metabolic craniopathy, fibrous dysplasia of bone, nanism, Cushing's syndrome, and functional hypophyseal cachexia. Cardiac or renal manifestations of hypothalamic dysfunction are of clinical importance chiefly in diabetes insipidus, in the hypothalamic variety of Cushing's syndrome, in the previously mentioned organic hypothalamic arrhythmias, in congestive heart failure, and possibly in cases of hyperthyroid auricular fibrillation. In those conditions, treatment might be directed to the hypothalamus as well as to the heart or the kidneys.

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SAMA Honorary Memberships Open To Physicians

"KEEP UP with the young men who are keeping up with you" is the theme of a fall campaign now under way by the Student American Medical Association to encourage physicians to join the organization as honorary members. This new membership category was created at the request of doctors who wish to keep in touch with the student side of medical education, David Buchanan, national president of SAMA, said.

Honorary membership, with yearly dues of five dollars, entitles the physician to a subscription to the monthly 72-page Journal of the SAMA as well as participation in the annual convention and other activities of the association. Physicians and friends of the medical student interested in becoming honorary members should contact Mr. David Buchanan, Student American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

—*A.M.A. News Notes*

Retrolental Fibroplasia

Blindness in Infants of Low Weight at Birth

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• *Retrolental fibroplasia is today the principal cause of blindness in children of preschool age, exceeding all other causes combined. The disease occurs in infants of low weight at birth, commonly those born prematurely. The incidence of the disease is rising at an alarming rate. Vitamin E deficiency, corticotropin (ACTH) deficiency, the use of cow's milk in place of mother's milk, and improper oxygenation have been suggested as etiologic factors but the cause remains a mystery. Often the incidence is high in institutions in which maximal care is given premature infants.*

Clinically, the disease advances through an "active" phase during which regression is possible, and a "subsiding" or "cicatricial" phase which terminates with the formation of a disorganized opaque mass behind the lens. The earliest manifestations are noted in the fundi. Hemorrhages, neovascularization, transudation commencing in the periphery, and retinal separation contribute to the formation of the characteristic retrolental membrane. The diagnosis may be made when the retrolental membrane is observed in the eye of an infant whose weight at birth was low. Differential diagnosis is required occasionally.

Thus far, no form of therapy has prevented or reversed the pathologic changes successfully. Use of vitamin E, corticotropin and mother's milk has not influenced the incidence of the disease. Avoidance of premature delivery if possible is indicated.

THE YEAR 1942 is of special interest in medical history as well as in world history. In that eventful year when the blackout and dimout entered our daily lives, Terry[26] described and named retrolental fibroplasia—a disease destined to bring a more genuine blackout or dimout into the lives of a segment of our population yet unborn. He stressed the novel association of the condition with prematurity. What may have appeared then as a clinical curiosity is recognized today as the principal cause of blindness in infants and children of preschool age, exceeding all other causes combined.

Travers[27] in 1820 gave the earliest description of a condition resembling retrolental fibroplasia. For some reason which cannot be explained, only isolated cases were reported before 1942. With gonorrheal ophthalmia controlled through legislation, congenital eye defects and the effects of injury had accounted for much of the visual impairment in infants and preschool children. Only a small percentage of preschool children were totally blind. Since 1942, retrolental fibroplasia has taken the lead with a steady and alarming increase in the number of cases. It now presents a problem which extends its tentacles into many areas. This is indeed a matter of great concern.

This disease strikes only infants, particularly those born prematurely with low weight at birth. Both eyes are usually affected. The retina and vitreous body are primarily involved. It is a clinical entity distinct from any type of disease of the eye that may likewise produce an end picture of disorganization of the retina and vitreous body. From the histopathologic standpoint, the name may not be entirely proper. However, from the purely clinical viewpoint, it serves adequately to describe the principal manifestation—the development of a fibrous membrane behind the lens.

The incidence of retrolental fibroplasia is peculiar in its manifestations. It is unknown for the country as a whole and varies considerably in different localities. In one hospital of an area only a few cases are seen; in another, in the same area, many cases. In the same institution, one year a high percentage of premature infants have the disease and the next year it becomes a rarity, although no material change in the care of the infants is made.

Premature infants weighing 3 pounds or less at birth and of gestational age six to seven months are the most frequent victims. Occasionally, it occurs in infants weighing more than four pounds at birth and in full-term infants. Owens[16] has not observed the development of retrolental fibroplasia in full-term infants.

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Although it is predominantly an American disease, cases have been reported in Canada, Denmark, England, France, Spain, Sweden, and Holland. Ryan[22] recently reported the first 23 cases in Australia. Boys are slightly more frequently afflicted than girls. In Gilger's[8] series, only boys were afflicted. Oddly, it occurs more frequently in infants born in hospitals — especially those of our larger medical centers—where such infants receive the best adjuvant care. In contrast, in a review of records for a two-year period (1947 and 1948), Exline and Harrington[6] could not find a single case among 80 infants who weighed less than 1,500 gm. (3 pounds 5 ounces) at birth, in the Charity Hospital of Louisiana at New Orleans, where maternal diseases, dietary privation and inadequate prenatal care are the rule.

Generally speaking, the lower the birth weight and the greater the prematurity, the greater the incidence. In multiple births, the lighter and weaker infant is more liable to have the disease. Although both eyes are commonly affected, one eye may occasionally escape with less damage and retain limited vision. Reports from different parts of the country indicate that the incidence of retrolental fibroplasia in infants weighing four pounds or less at birth ranged from zero to 32 per cent. The 32 per cent incidence was reported from a single hospital in Wilmington, Delaware, for a two-year period (1947-1949) by Lamotte.[12]

In California there are nearly 500 blind children of preschool age. Of these, 59 per cent are blind from retrolental fibroplasia.[3] The percentage may be even greater, if we take into consideration cases which have not yet been brought to the attention of schools for the blind.

The increasing incidence cannot be attributed to improper diagnosis or failure of recognition in the past. In certain localities the number of cases of retrolental fibroplasia far exceeds the number of cases of blindness that occurred prior to 1942 which could possibly be attributed to retrolental fibroplasia. Furthermore, it is not due to the increased survival rate. Statistics of many hospitals indicate that any increased survival rate is small compared with the apparent increase in the incidence of retrolental fibroplasia.

The author has recently concluded a study of the incidence of retrolental fibroplasia among prematurely born infants in the nursery of St. Francis Hospital, Lynwood. A total of 32 infants were observed. Four died early in life and the 28 survivors were followed through for a minimum of six months. The number of infants weighing three pounds or less and those weighing over three pounds were equally divided; none weighed more than 4 pounds 12 ounces. Each infant received dl-alpha tocopherol acetate "prophylactically" from the first week of life. Retrolental fibroplasia did not develop in any of the infants who weighed more than three pounds; in the group weighing three pounds or less the incidence was 18 per cent.

During each of the years 1949 and 1950, approximately three and a half million live infants were born in the United States. According to Simpson and Geppert,[23] 1.4 per cent of the total number of infants born weigh under 1,500 gm. (approximately 3 pounds) and according to Fletcher[7] the average mortality rate for premature infants is 29 per cent. With these figures, and applying the incidence of 18 per cent as the likely incidence among survivors in the average community, it may be anticipated that one infant in every 559 born alive, regardless of weight, may be blinded by retrolental fibroplasia.

ETIOLOGY

We are still in the dark concerning factors which may be responsible for the rather sudden appearance of the disease, and its increasing incidence. Numerous ramifications have been explored relative to the parents, the pregnancy, the delivery, and the management of the premature infant during his early existence. The latter is particularly important. The incubator phase of his life is quite complex. His status—as an extra-uterine fetus—presents countless problems, any one or more of which may hold the key to the cause of retrolental fibroplasia.

Efforts thus far have been rewarded only to the extent that a number of factors have been determined not to influence the development of the disease. These are: age of father or mother; heredity; familial trait; racial classification; social status and mode of life of the family; time of conception; incidence of infectious diseases in the community; food consumed by the mother during pregnancy; common infectious diseases of the mother (poliomyelitis, virus pneumonia, influenza) during pregnancy; chronic illness (cardiovascular disease, diabetes, tuberculosis, syphilis) during pregnancy; uterine or gestational diseases; order of birth; cause of the premature onset of labor; induced or prolonged labor; exposure to light; Rh factor; and use of the water-miscible multiple vitamins.

There are manifestations of the disease which suggest it may originate prenatally, and other factors that indicate postnatal origin. There is evidence that fibroplasia may be a syndrome of which the ocular disease is merely a part. Premature infants require and receive special attention in the form of modified diet, supplementary drugs and vitamins, blood transfusions, etc., to compensate for their immaturity. The resultant metabolic imbalance may provide causative factors capable of initiating the pathologic pattern of retrolental fibroplasia.

Several theories relative to etiologic derivation have been offered during the past three years. These are worthy of mention:

1. *Vitamin E deficiency* (Owens and Owens[17]): The immature organism particularly is susceptible to vitamin E deficiency. Vitamin E appears to be an important essential in animal nutrition for the normal development of the immature organism. The premature infant suffers from defective fat metabolism and is deprived of fat-soluble vitamins in the low-fat diet. The use of vitamin A and iron for the anemia further decreases the little vitamin E available to the premature infant.

2. *Corticotropin (ACTH) deficiency* (Reese and Blodi[20]): During the last trimester of pregnancy, there is a state of hyperadrenalism caused probably by the formation of corticotropin and adrenal cortical steroids in the placenta. The prematurely born infant is obviously deprived of this maternal hormonal environment necessary for normal development.

It is known that induced hyperadrenalism inhibits the growth of mesenchymal cells and that cortisone specifically inhibits the growth of capillaries. The neovascularization features of retrolental fibroplasia—that is, dilatation of existing blood channels and their proliferation into the vitreous body—may thus be accounted for by the lack of corticotropin.

3. *The use of cow's milk* (Hepner[9]): The physiologic deficiencies of the very prematurely born infant include a limited ability of the kidneys to concentrate electrolytes, manufacture ammonia and excrete phosphates. Cow's milk, which has taken the place of mother's milk, especially in institutions, has three times the electrolyte content of human milk. Balance studies have proven that this concentration approaches the limit of capabilities of the kidney of the prematurely born infant, giving rise to circumstances (edema, capillary leakage, hemorrhage, etc.) conducive to the formation of retrolental fibroplasia.

4. *Anoxia* (Szewczyk[24]): The premature infant is oxygen-deficient. During a period when the incompletely developed retina (and other fetal tissues) utilizes oxygen at a rapid rate, there exists a state of subclinical anoxia. If the need for oxygen by the retina is met partially, the disease develops in its attenuated form; if met completely, the disease does not develop at all. The oxygen tension in the blood is the important factor.

Factors which may predispose a premature infant to anoxia are given by Rudolph and Sirlin[21]:

(a) Premature disruption of the maternal circulation from any cause.

(b) Inability of the fetal circulatory system to carry on normally its physiologic functions because of immature development.

(c) Anemia of prematurity which is more severe than in full-term infants.

(d) Incomplete saturation of existing hemoglobin from immaturely developed lungs and respiratory controls.

(e) Pressure on the soft, malleable head against the pelvic floor during the second stage of labor.

(f) Oversedation and deep anesthesia.

(g) Position of baby sleeping face down on the mattress.

(h) Division of the maternal circulation between the fetuses in multiple births.

(i) Vaginal bleeding which occurs in a large percentage of mothers giving birth to children in whom retrolental fibroplasia develops.

(j) Poor circulation of air in bassinets.

(k) Acceleration of body metabolism by warm temperatures in the nurseries, so that even though the oxygen ratio of the environmental air be increased, it may not be sufficient to meet the requirements.

(l) Greater requirement of oxygen by the nervous system and retina.

Ingalls[11] proved by animal experimentation that anoxia is a teratogenic agent. A variety of defects of the eyes have been produced in both dead and surviving animals under conditions of anoxia—for example, retinal folding, coloboma and eversion of the retina, absence of the anterior chamber, and proliferation of vasoformative tissue. The kind of defect appears to be determined by the stage of gestation when the anoxia prevailed and by the degree of anoxia. This lends support to Szewczyk's theory.

5. *Hyperoxia* (Campbell[1]): Premature infants who received oxygen freely, both prophylactically and during periods of cyanosis, developed retrolental fibroplasia in greater numbers (18.7 per cent) than those who received it moderately (7.1 per cent). Ryan,[22] in support of the work of Campbell, advanced the idea that retrolental fibroplasia is due to the toxic effect of oxygen and that excessive oxygen treatment causes "the stimulation of mitoses and overgrowth of connective tissue, increase of vascularity, and increased growth rate of the inner layer of the optic cup leading to further detachment."

CLINICAL COURSE

Clinically, retrolental fibroplasia follows a fairly uniform sequence. At birth the eyes are typically normal for a prematurely born infant. During the first few weeks of life, the eyes of infants destined to have the disease do not differ from the eyes of infants in whom it does not develop. The usual degree of responsiveness may be noted during the brief intervals the eyes are opened, principally in the form of dislike for bright light. Occasionally, there is a haze in the vitreous body or minor opacities, which soon disappear. All visible remains of the hyaloid system usually disappear early in postnatal life.

The "active" phase often commences before the infant has attained sufficient weight to be discharged from the premature nursery. It may commence as early as three weeks after birth; usually four to six weeks after birth. The initial manifestations are observed in the fundi: the retinal arteries become tortuous, assuming hairpin curves, and the veins become dilated to two or three times normal caliber. At this stage, regression is possible and in 50 to 60 per cent of cases the eyes return to normal. In others, however, the disease progresses with a series of devastating events: hemorrhages, neovascularization over the surface of the retina and in the vitreous body, transudation commencing in the extreme periphery of the fundus, and retinal detachment. These changes occur during the second and third month of life. At this stage, spontaneous regression is rare. Reese and Blodi[20] expressed belief that neovascularization may be present even before it can be recognized clinically. Vascular dilatation and neovascularization have been noted in the iris, simultaneously; also, in the optic nerves and orbit.

The "subsiding" or cicatricial phase commences about the third or fourth month of life. There is organization and contracture with the formation of a cyclitic membrane. The detached retina is drawn into the contracting fibrous tissue which forms the disorganized opaque mass behind the lens — the characteristic retrolental membrane. Commonly, this obstructs the entire pupil and the fundus reflex is no longer visible. The ciliary body is abnormally serrated. In the extreme periphery, tooth-like projections, often attached to uveal tissue, may be noted. The anterior chamber is shallow, often completely obliterated, with iris and lens in close proximity to the cornea. Glaucoma may ensue. Enophthalmos frequently is present in the end stage, probably from contractures resulting from the orbital involvement by the angioplastic process. When the retrolental membrane is formed, the eye ceases to grow. This retards the growth of the bony orbit.

In support of the theory that retrolental fibroplasia may derive from subclinical anoxia, Szewczyk[24] correlated the clinical course of the disease with anoxia. When the oxygen tension in the blood falls below the requirements of the fetal retina, the retinal vessels dilate, then become tortuous and, at the same time, new channels develop. If the demands for oxygen are still not satisfied, edema in the least matured parts of the retina develops (peripheral gray-white areas). The vessel walls begin to suffer, especially at the venous side, because the retina utilizes all the available oxygen, and transudation and hemorrhages take place. The transudation accounts for the vitreous body opacities. The gradual progressive retinal edema plus transudation from the vessels causes the gradual separation of the retina. Then atrophy and fibrosis set in. Similar changes occur in the ciliary body and iris, and no doubt in the brain and other nervous tissues.

McFarland and co-workers[14] also emphasized the measurable increase in the size of the vessels, varying between 10 per cent and 20 per cent, more pronounced in the veins, with anoxia.

It has been estimated that the active phase of the disease develops in approximately 50 per cent of all infants who weigh less than three pounds at birth. In cases in which the disease does not progress to the formation of the retrolental mass, the amount of residual damage depends on the extent of irreversible changes present when regression commences. In some cases regression occurs when there is advanced myopia or formation of a partial retrolental membrane. A membrane thinned in spots, one which covers only a localized portion of the retrolental space, or one which is limited to the periphery of the anterior vitreous body at the equator of the lens, may admit some light. This accounts for the apparent perception of light, in some cases.

Birthmarks of the hemangioma type are an interesting coincidence. These are known to occur in 1 per cent or 2 per cent of full term infants and in approximately 15 per cent of prematurely born infants, with or without retrolental fibroplasia. Rambar[19] emphasized the greater incidence of skin hemangiomas in premature infants of low weight at birth.

Similarity between the pathologic development of retrolental fibroplasia and hemangiomas of the skin in premature infants was noted by Reese and Blodi.[20] Both conditions are characterized by the angiomatous process (predominantly in the vitreous body, in the case of retrolental fibroplasia) and histologically identical newly formed vascular channels; both undergo progressive and then regressive changes with a final stage of cicatrization—all during comparable periods of time; and both are of higher incidence in the lower birth weight groups.

At least 80 per cent of all hemangiomas appear between the first and sixth week of life. This may account for the discrepancies in the literature wherein the exact time of appearance is not specified. The hemangiomas are usually multiple and grow during the first six months. Then, regression commences and by the end of the first year they have usually disappeared.

HISTOPATHOLOGY

In examination of lesions in the early stages of the disease Reese and Blodi[20] noted angiomatous tissue extending from the retina into the vitreous body, particularly in the periphery around the base of the vitreous body. This angioplastic process in the vitreous body is the outstanding and characteristic early feature. The retina does not participate in the acute phase except as a source of the newly formed vessels. Transudation, hemorrhage and organization follow.

The earliest lesions thus far observed microscopically by Owens and Friedenwald[18] were found in the nerve-fiber layer of the retina. Here are observed patches or areas of proliferating endothelium, surrounded by an increase in the number of glial cells. Then areas of edema and small hemorrhages in the retina were observed. The next change was rupture of the internal limiting membrane with proliferation of the endothelial cells into budding new vessels along the inner layer of the retina and into the vitreous body. It was noted that eventually this tissue, increasing in density and quantity, became part of the loops of the elevated retina which coalesced to form the fibrous disorganized mass of tissue of the end-stage.

In eleven cases of retrolental fibroplasia studied, Dixon and Paul[5] found the essential lesions to be separation of the pars optica retinae and pars ciliaris retinae with proliferation of the underlying pigment epithelium. In some of these cases there was subretinal hemorrhage. Retrolentally, in addition to separated retina, which had usually undergone gliosis, there were, in varying amounts, fibroblasts and thin-walled blood vessels contributed by the retina and layers of condensed vitreous body. Remnants of the hyaloid artery and tunica vasculosa lentis were not observed.

DIAGNOSIS

The external manifestations of retrolental fibroplasia are well defined. When a beam of light is directed through the pupil, passing through the clear transparent lens, an opaque, whitish or grayish mass —often vascularized—can be seen immediately behind the lens. This is fairly diagnostic, especially when observed in both eyes of an infant born prematurely and of low weight at birth. The presence of a shallow anterior chamber, an atrophic iris, synechia, and elongated ciliary processes at the extreme periphery (behind the iris) further support the diagnosis. If it is possible to visualize the fundi, such changes as retinal folds, retinal detachment, hemorrhages, macular degeneration, healed foci resembling chorioretinitis and atrophied optic discs may be observed.

Retrolental fibroplasia may be confused with five conditions requiring differentiation:

1. *Retinal dysplasia* also involves both eyes but is not related to prematurity. The eyes are usually microphthalmic with cataract and glaucoma often supervening. The eye changes are accompanied by anomalies of the brain, heart, vascular system or skeleton, one of which often causes early death. Histologically, the retina shows signs of dysplasia, usually with the formation of rosettes and detachment. The connective tissue behind the lens seems to be the persistent primary vitreous body.

2. *Persistent hyperplastic primary vitreous body* (tunica vasculosa lentis) is unilateral and occurs in full-term infants. The eye changes are not accompanied by anomalies elsewhere. The affected eye is often smaller. The retrolental membrane is thickest in the center and fades peripherally, where long ciliary processes may be seen. Cataract and glaucoma from lens swelling develop. A persistent hyaloid artery may be seen if ophthalmoscopic examination is possible.

3. *Retinoblastoma* usually involves one eye, at first, and occurs later in life. The affected eye is of normal size. The fundus presents a glistening grayish or yellowish nodular mass with newly formed vessels, hemorrhages and foci of degeneration on its surface. The familiar "cat's eye" reflex is then present. X-ray studies reveal granular deposits (calcium) in the tumor mass. The intraocular tension is likely to be increased as the mass becomes more space-consuming.

4. *Pseudoglioma* involves one eye and follows some acute infection. The affected eye is usually flushed and painful. Hypotony is commonly present.

5. *Cataract* may involve one or both eyes. With the exception of the "white" pupil, the affected eye may be normal in every respect. The opacification is observed immediately behind the pupillary margin and this is facilitated when the examination is made through a fully dilated pupil. Vascularization is absent.

TREATMENT

While knowledge of the onset, clinical course and pathologic features of retrolental fibroplasia has advanced considerably in recent years, no form of therapy has been successful in reversing the pathologic disorganization of the retina and vitreous body after an eye has become deeply involved in the active phase of the disease; nor has it been possible to give the infants any useful vision. Surgical procedures have been attempted. Portions of the retrolental membrane have been excised to clear the pupillary area and make available for vision any portion of retina that might not be detached. The membrane removed usually contained disorganized retina. Visual improvement was negligible, if any, and the technique has been abandoned. Attempts to eliminate the theoretical basic etiologic factors have had little influence on the incidence of the disease.

Results from the use of dl-alpha tocopherol acetate prophylactically — which only two years ago appeared so promising—have not been consistently satisfactory. Owens[15] still recommends its use prophylactically but now believes only the severity of the disease may be influenced favorably.

The benefits from the use of corticotropin and cortisone have stirred little enthusiasm; nor is the use of those hormones without systemic hazards. Locke,[13] Cook,[2] Day[4] and others have reported deaths in infants following the use of corticotropin and cortisone in the treatment of retrolental fibroplasia. The susceptibility of infants to infection appears particularly to be increased.

The use of human milk in place of cow's milk does not eliminate retrolental fibroplasia. Recently, Hess and co-workers[10] made an analysis of 317 living premature infants whose weight at birth ranged between 605 and 1,260 gm. (under three pounds). Of the total, 187 were born since retrolental fibroplasia was brought to the attention of the medical profession. Although all were fed breast milk, the eye defects noted in the survey included 13 cases of retrolental fibroplasia, an incidence of 7 per cent. Then again, none of the 80 infants reported by Exline and Harrington[6] received breast milk, yet amongst them there was not a single case of retrolental fibroplasia.

Proper oxygenation is receiving much attention. Szewczyk[24, 25] recently treated nine patients with early retrolental fibroplasia (that is, vascular engorgement, tortuosity of vessels, hemorrhages, and early retinal detachments) by placing them in an atmosphere with a concentration of 60 per cent to 70 per cent oxygen. In all cases, there was dramatic improvement in a relatively short time. He noted that the disease began to develop rapidly in seven premature infants when they were removed from incubators (where oxygen concentration was 50 per cent or more) and placed in bassinettes in the nursery where oxygen concentration was 22 per cent. After 24 to 48 hours in all cases there was development of dilated retinal vessels; and, in three to four days, tortuosity, neovascularization, hemorrhages and progressive peripheral retinal separation developed in almost all cases. The condition was rapidly reversed when the infants were placed back in an atmosphere of 60 per cent concentration of oxygen. In all cases, there was dramatic improvement in 24 hours and almost complete regression within three or four days.

Further studies have led to more specific recommendations: that premature infants be given minimal amounts of oxygen—just sufficient to meet their needs; that excessive oxygen concentrations be avoided; and that "weaning" the infant from oxygen be gradual, for even a normal adult cannot withstand sudden transfer to an environment of lowered oxygen concentration without disturbance of the central nervous system. Whether or not this procedure will reduce the incidence of retrolental fibroplasia remains to be proven.

THE PROBLEM

With few exceptions, if the disease has progressed through its usual course and the retrolental membrane has developed, the net result is a blind infant. Once the diagnosis is established, there is the dual task of dealing with parental reactions and providing training, education, and guidance for the tiny victim.

Parental reactions differ, and in many instances the exact emotional response to the infant's blindness is not in evidence at once. Gradually, it moulds into that of acceptance, conflicting feelings of rejection and overprotection, or emotional inability to deal with the reality of blindness. Parental feelings of guilt and frustration complicate the situation.

It is generally believed that the most potent of all influences on social behavior is derived from the primary social experience with the mother. "Acceptance" is a requisite for the favorable adjustment of the blind infant. From the social worker's standpoint, Wilson[28] considers the blind child accepted when the mother is able to concentrate on the child himself and not on his blindness; when she does not dwell on how the blindness affects *her* but rather on how it affects the child and how she can help him meet it for *his own* life satisfaction; when she makes the child a part of the family group.

Every phase of the blind infant's life centers around proper adjustment. In California this has not escaped the attention of the State Department of Education. In 1950, a program was organized to be executed as a function of the California School for the Blind at Berkeley. Field workers now visit the home and not only assist the family in the adjustments to the blind infant but suggest and demonstrate methods and materials which facilitate his learning. He is instructed in everyday duties. Parents are encouraged to meet regularly to exchange ideas and experiences. It is definitely to the advantage of the blind child to have this assistance as soon as the diagnosis is established. Blind persons make a more favorable adjustment if their early life afforded them a sense of physical and emotional security. The early months are important also in preparing for the needs which are to follow. Many blind children have been placed in regular nursery schools and kindergartens for sighted children on an experimental basis. Their progress has been found to be very satisfactory.

The combined efforts of obstetrician, pediatrician, ophthalmologist, pathologist. epidemiologist, statistician, social worker, and educator are required to cope with the problem of retrolental fibroplasia. For the obstetrician there is a particular assignment:

1. Make every effort to reduce the incidence of premature births. Reexamine the causes of premature labor; some of these may be preventable. Confronted with indications for inducing labor prematurely, weigh them cautiously against the prospects of a blind baby. Keep in mind the simple formula: fewer premature deliveries = fewer cases of retrolental fibroplasia.

2. Consider carefully the need for drugs, narcotics and anesthetics before or during delivery if they will depress respiration or interfere with oxygenation in the mother or child. Any technique likely to produce anoxia in the infant may be a threat to his sight.

3. Following delivery of an infant of low weight at birth, advise the parents of the incidence of retrolental fibroplasia among infants in similar birth weight groups. Parents have learned to regard the incubator as a life-giving device but are completely unaware of the probability that blindness may be a concomitant of survival.

4. Provide ophthalmologic care as well as pediatric care immediately after delivery of an infant of low weight at birth. Continuous observation by an ophthalmologist may furnish the guidance necessary for proper oxygenation. Should the disease develop, an ophthalmologist is better prepared to interpret its significance to the parents.

5. Report any unusual circumstances relative to the pregnancy, the delivery, the mother, or the immediate postnatal care of an infant in whom retrolental fibroplasia develops. Note and record the incidence in your practice, in your hospital, in your community, and the factors which you believe may account for it. A passive attitude is not justified.

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CASE REPORTS

- **Stevens-Johnson Syndrome Treated with Cortisone and ACTH**
- **Measles Myelitis: Report of a Case and a Review of Diagnostic and Therapeutic Factors in Measles Encephalomyelitis**
- **Unilateral Deafness from Pontine Lesion**

Stevens-Johnson Syndrome Treated with Cortisone and ACTH

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In 1922, Stevens and Johnson[6] described two cases of eruptive fever, associated with stomatitis and ophthalmia. The condition was so unusual that they considered the syndrome a new clinical entity. The cutaneous lesions were widespread dark red maculae that became brownish papules in a few days. The eruption covered almost the entire body with the exception of the scalp. The mouth and lips were inflamed, eroded, and crusted. When the condition subsided, residual hyperpigmentation was present, but no scars formed. Both patients had purulent conjunctivitis which in one case developed into panophthalmitis with total loss of sight, and in the other caused greatly diminished sight, owing to corneal scars.

Since that time many similar cases have heen reported. In 1929[5] Rutherford described cutaneous lesions in two boys which resembled those reported by Stevens and Johnson. Ultimately in both cases the eyes had to be enucleated. Both the patients had high and continuous fever, which in one case was attributable to lobar pneumonia but in the other could be ascribed only to the skin eruptions. Wheeler[7] reported a case in 1930 in which purulent conjunctivitis and keratitis followed the cutaneous phase and caused perforation and blindness in both eyes. Hernandez, in 1935, reviewed nine cases and reported a tenth. Seven of the patients in the nine cases reviewed became totally blind owing to keratitis. Koke[4] in 1941 tabulated reports of eighteen cases, of varying intensity, in which chemotherapy was not used. Fourteen of the patients had severe impairment of sight.

Goldfarb,[3] in a review of reported cases, said that the most striking and serious feature of the syndrome is severe conjunctivitis with keratitis. He observed that the eruptions of the skin and mucous membranes subside in six to eight weeks and the corneal lesions are the only serious threat. Goldfarb tabulated data on 21 cases, in most of which sulfonamides were applied locally to the conjunctiva and were given systemically. Eight of the patients were classified as hlind. In bacteriologic examination of material from the site of infection the only pathogenic organisms noted were staphylococcus aureus or albus.

Essentially the Stevens-Johnson syndrome is a severe systemic disease that is manifest as erythema multiforme, particularly of the periorificial areas, with associated ophthalmia.

Duke-Elder classified the lesions of the eyes in this disease into three groups—catarrhal, purulent, and membraneous conjunctivitis. Purulent conjunctivitis may lead to perforation of the globe by a corneal ulcer, as it did in one of the original cases reported by Stevens and Johnson. The pseudomembraneous form, which is more common, also may cause permanent damage. A membraneous form of conjunctivitis and keratitis, associated with typical skin lesions, was reported by Fuchs[2] in 1876 and by Barkan[1] in 1913, or 45 years and 9 years, respectively, hefore the syndrome was recognized and described as a separate entity.

Following is a report of a case observed not long ago hy the author.

CASE REPORT

An 18-year-old girl was first examined by a dermatologist on March 5, 1951, because of "sores" on the face and inflammation of the left eye which had developed suddenly a few days before. The patient said that the first eruption was at a "break in the skin" caused by the teeth of a boy with whom she had collided in a basketball game three days previously.

Upon examination several bullous lesions on both cheeks were noted. They varied from 0.5 to 2 cm. in diameter and were surrounded by a narrow zone of erythema. The content of the bullae was purulent. The conjunctiva of the left eye was edematous and the blood vessels were engorged.

A diagnosis of impetigo contagiosa was made. Terramycin ointment was prescribed and 40,000 units of procaine penicillin (Crysticillin® fortified) was administered intramuscularly.

Two days later the cutaneous lesions had increased in number and the conjunctivitis was more intense. In addition there was bilateral blepharitis with bullae on the lid margins. Ophthalmic terramycin solution was prescribed for instillation every two hours during the day and terramycin ophthalmic ointment for application at night. Chloramphenicol, 250 mg. four times a day, was given orally. When the patient was examined two days later, the blood vessels in the throat were engorged and lesions resembling those of aphthous stomatitis were scattered on the buccal mucous membrane. The bilateral conjunctivitis had become purulent. In addition acute bilateral keratitis closely resembling dendritic herpetic keratitis was present and there was intense photophobia. The ulcer was deeper and the lesions more

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extensive in the left eye than in the right. There were no inflammatory changes in the genitoanal area. The temperature was 99.6° F. The dermatologist* then recognized that the disease was Stevens-Johnson syndrome and called the author into consultation. The patient was immediately hospitalized.

The night of admittance to hospital, March 9, 1951, the temperature rose to 100° F. The pulse rate varied between 80 and 100 per minute. A rise of temperature approaching 100° F. occurred every afternoon thereafter for six days.

Twenty per cent cortisone in benzalkonium chloride (Zepheran®) solution 1:10,000 was instilled in each eye every two hours, 10 mg. of corticotropin (ACTH) was injected intramuscularly every six hours, and Tyrothricin® eye drops were instilled. The salt content of the diet was restricted to 500 mg. In addition the patient received chloramphenicol, 750 mg. every six hours.

The patient remained quite cheerful. The chief complaints were of photophobia and poor sight. There was no change in body weight during the period of hospitalization. There was no clinical evidence of fluid retention, and no evidence of potassium deficiency. Within two days after therapy was started the facial lesions began to dry up and to subside slowly. No new lesions appeared. On March 12 the chloramphenicol dosage was reduced to 500 mg. every six hours. The next day it was decreased to 250 mg. every six hours, and the dosage of corticotropin was reduced to 10 mg. every eight hours.

The facial lesions subsided so well that on March 15 the administration of chloramphenicol was discontinued. Although the photophobia diminished, there was no improvement, objectively, in the keratitis. In fact deeper infiltration of the cornea developed in the left eye and there was no change in the shallow superficial defect which had an irregular outline like the lesions of dendritic keratitis. Infiltration of the deeper layers of the cornea did not occur in the right eye. On March 17 when the patient was discharged the cutaneous lesions were almost entirely cleared but there was residual keratitis in each cornea.

The patient was advised to continue to use cortisone eye drops and tyrothricin ointment every three hours and to apply hot compresses afterward. Sulfonamides were given orally and penicillin systemically. The pupils were kept dilated with atropine. Despite those procedures, keratitis continued in both eyes and iritis with precipitates developed in the left eye. On April 11, typhoid antigen H was injected intravenously to induce hyperpyrexia, and later two more injections were given. No improvement was noted in the corneal ulcers. For more radical fever therapy, 8 cc. of raw milk was injected intramuscularly into the right buttock on April 28. The temperature rose to 103° F. and photophobia diminished. Three days later 10 cc. of raw milk was injected, then, after a three-day interval, 12 cc. Two days after the last injection the temperature returned to normal and the precipitates in the anterior chamber of the left eye became smaller in size and number. After two days at normal levels, the temperature rose to 102° F. on May 9, and a dry, hacking cough developed. On May 12 the temperature was 104.8° F. and the cough persisted.

The patient was hospitalized again. She complained of discomfort in the upper left quadrant of the abdomen. Nausea and anorexia were present. Increased irritability was manifest. In addition to the lesions of the eyes pronounced erythema of the nasopharynx was noted but there were no circumscribed lesions. Upon palpation the spleen was observed to be enlarged and tender. Increased breath sounds but no rales were noted in auscultation of the chest. The temperature was 102° F. and the pulse rate 98 per minute. The hemoglobin content of the blood was 13.8 gm. per 100 cc. Erythrocytes numbered 4,450,000 per cu. mm. and leukocytes 11,800 with a cell differential of 2 per cent monocytes, 13 per cent lymphocytes, 30 per cent non-segmented cells, 52 per cent segmented, and 3 per cent metamyelocytes. The blood sedimentation rate was 27 mm. in 30 minutes and 28 mm. in one hour. The urine was clear, the specific gravity 1.010, the reaction acid. It contained sugar and a trace of albumin. In microscopic examination of the urine, fine granular casts and a few epithelial cells, leukocytes and mucous shreds were noted. No pathogenic organisms grew on a culture of the blood. In an x-ray film of the chest, increased peribronchial markings in both lower lung fields were noted and it was observed that the dome of the left diaphragm was roughened. There was no free fluid in either pleural cavity. The lung fields otherwise were clear and there was no consolidation.

One thousand cubic centimeters of 5 per cent glucose in normal saline solution was given intravenously. A sponge bath with alcohol caused no reduction of temperature. Two hours after admittance the patient was given 500 cc. of distilled water orally. Thirty minutes later, after Dramamine® had been administered for nausea, 1 gm. of chloramphenicol was given and the patient vomited shortly thereafter. Ten milligrams of corticotropin was injected intramuscularly. A half hour later the temperature was 105.4° F. and at the end of an hour it was 104°. Chloramphenicol, 500 mg., was given and an hour later the dose was repeated. Five and a half hours after the first 10 mg. dose of corticotropin, a second dose, of 20 mg., was given. The temperature declined to 99.8°, and four hours later was 99°. The pulse rate had decreased to the normal range four hours previously.

Corticotropin then was given on a schedule of 10 mg. four times a day. The temperature and the pulse rate remained normal, the enlargement and tenderness of the spleen abated, and coughing diminished. The patient complained of abdominal cramps for two days. Gradually the corneal ulcers became shallower and photophobia diminished.

The patient left the hospital six days after admittance and from then until the administration of corticotropin was discontinued a month later the dosage was gradually reduced and the interval between injections lengthened. For the first week after discharge from the hospital, 10 units of whole liver extract was given intramuscularly twice a day.

Two flare-ups of keratitis, manifest in the breaking down of the corneal epithelium over small areas of the corneal scar, occurred subsequently. On both occasions local applications of cortisone were used. During the second exacerbation triple typhoid injections were given with beneficial influence on the corneal defects. Eight months after the onset of the disease, however, there was still active keratitis of low grade in the right eye. Visual acuity was 20/30 in the right eye and 20/40 in the left.

DISCUSSION

The only other report on the use of corticotropin in the treatment of Stevens-Johnson disease was published by Yates[5] and associates in 1951. The patient, a six-year-old boy, completely recovered after 48 days in the hospital and treatment with corticotropin and antibiotics. In the present case the local effect of the ophthalmic solution of cortisone was striking only as far as the hyperemia and the photophobia were concerned.

The origination of the disease at the site of traumatic contact with the teeth of a playmate may be of significance.

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*The author wishes to thank the dermatologist, Dr. Maximilian E. Obermeyer, clinical professor and chairman of the Department of Dermatology, School of Medicine, University of Southern California, for his contribution to this study.

SUMMARY

In a case of erythema multiforme exudativum, the first lesion was on the skin, then successively the mucous membranes of the nose, mouth, and pharynx, and the conjunctivae and cornea became involved. The case was complicated by pronounced bronchial involvement and high fever. The severity of the protean manifestations of the disease was greatly diminished within four hours after a small dose of corticotropin was given. The ophthalmic manifestations, which had improved very gradually before the pronounced elevation of temperature, diminished rapidly afterward although keratitis did not completely heal.

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Measles Myelitis: Report of a Case and a Review of Diagnostic and Therapeutic Factors in Measles Encephalomyelitis

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It is gradually being recognized that measles encephalomyelitis is not a generally benign complication of measles but, rather, is usually attended by permanent sequelae of greater or less severity. Particularly, it is important that electroencephalographic study be carried out on all patients, and that psychometric and psychiatric evaluation be done, both at the time of the original illness and again at a later date. There are indications that as time passes the original neurologic signs may be replaced by impaired mentality and behavior disorders.

It is well recognized that transient symptoms suggestive of encephalitis may be brought about by quite non-specific changes such as hyperthermia; and, less certainly, that rather clear-cut encephalitis may be accompanied by a normal electroencephalogram. It is therefore incumbent upon physicians to make electroencephalographic studies in all cases in which encephalitis is suspected. But if the tracings are normal, the diagnosis can be supported only with the soundest of neuropsychiatric evidence.

REPORT OF A CASE

A white boy, seven and a half years of age, was admitted to the communicable disease unit of the Los Angeles County Hospital on Jan. 25, 1952, with measles and weakness of the legs. Nine days previously catarrhal symptoms had developed and three days later generalized morbiliform rash appeared. (Concomitantly, six playmates of the patient had measles.) Although improving clinically, the patient was given penicillin on the sixth and seventh days of the illness. On the eighth day fever returned and generalized weakness of both legs was noted.

When examined the patient was alert and cooperative and appeared to have no discomfort. The rectal temperature was 101.4° F., the pulse rate 108 per minute and respirations 20 per minute. On the skin was a resolving bronze morbiliform rash. There was no evidence of lymphadenopathy or of meningeal irritation. Tendon reflexes were equal and apparently normally active and the superficial skin reflexes were intact. There was pronounced weakness of both lower extremities, and the patient was unable to walk.

The hemoglobin content of the blood was 13 gm. per 100 cc. Leukocytes numbered 9,500 per cu. mm., with polymorphonuclear cells 65 per cent of the total. The spinal fluid pressure was normal and the fluid was clear and colorless. The result of a Pandy test was negative. Four drops of the fluid reduced 1 ml. of Benedict's solution. The chloride content was 784 mg. per 100 cc. There were 47 lymphocytes per cu. mm.

Symptomatic therapy was given and the patient rapidly and progressively improved. He became afebrile on the third hospital day. Weakness in the shoulders and thighs noted on the third day had cleared by the sixth day, but the patient then was observed to have hamstring stretch pain, slight stiffness in the back and neck, and right lumbar scoliosis upon standing. He had been unable to walk unaided since the fifth day. On the seventh day he was transferred to another hospital for convalescent physiotherapy.

DISCUSSION

Since poliomyelitis is endemic in the area, it must be recognized that the diagnosis of measles myelitis is presumptive. The time intervals, however, are classical; and, in the last analysis, a certain degree of presumption must be conceded in the diagnosis of most of the infectious encephalomyelitic diseases.

Of the usual diseases of childhood, measles is exceeded only by mumps in association with secondary involvement of the central nervous system. The frequency of measles encephalomyelitis in relation to measles has been variously reported as 1:1,000 to 1:1,300, and there is some indication that the incidence may be increasing.[3] It has been observed that the incidence of central nervous system involvement is relatively higher in epidemic years.

There is no unanimity regarding etiologic delineation of measles encephalomyelitis. Rivers[6] speculated that there is either a periodic change in the measles virus or that some environmental or genetic change in the host is responsible. Lucksch[5] expressed the belief that predisposition to nervous system disease is a factor. Inductive reasoning gives rise to consideration of four possibilities: that the measles virus may acquire neurotropic characteristics; that a latent resident virus that affects the nervous system may be activated by measles; that neurotoxins may be elaborated during measles; that the measles virus is a sensitizing agent and the nervous system disease an allergic reaction. At present, the enigma cannot be resolved, but measles virus has been isolated from the brain of a person who died of encephalomyelitis.[8]

Generally the complication appears from the fourth to the sixth day following the rash; but it may occur during the catarrhal phase and has been observed as late as the 21st day after onset of the disease. Nervous system complications may occur in persons of any age, although the highest incidence is in patients five to eight years of age. The symptoms are non-specific, consisting of (in various combinations) rise in temperature, headache, lethargy, stupor, convulsions, stiffness of the back or neck, muscular weakness, spasticity, urinary retention, and abnormal reflexes.[4]

The complication has been divided rather arbitrarily into several types depending upon the predominant symptoms: meningeal; encephalitic; bulbar; striatal, characterized by abnormality of muscle tonus and choreo-athetoid movements; myelitic, typified by abnormality of reflexes, changes in muscle tonus and, sometimes, sensory changes. For completeness a "mixed" type is included.

Results of examination of spinal fluid may be indicative, although not pathognomonic. Usually the pressure is elevated, the protein content normal or increased, and the sugar content normal. There may be no cells in the fluid or as many as 1,000 per cu. mm., usually lymphocytes. The usual range is from 50 to 200 cells. Although Litvak[4] expressed the opinion that there is no correlation between spinal fluid content and prognosis, Sawchuk and co-workers[7] in a report on a series of cases noted a relationship between low cell content and severity of disease: 75 per cent of the patients who died had fewer than 25 cells per cu. mm. in the spinal fluid.

An electroencephalogram may occasionally be normal in definite clinical encephalitis, but usually the tracing is characterized by sharp and slow (2 to 4 second) waves; and the degree of abnormality is increased by hyperventilation. Generally the degree of electroencephalographic abnormality is directly proportional to the severity of the disease.

The pathologic changes in the brain and spinal cord are non-specific. Usually there is congestion and edema of the brain with petechial hemorrhages and thrombosis of the smaller vessels. The most constant microscopic observation is perivascular demyelinization. Less frequently noted is perivascular infiltration with small round cells. There is also a glial reaction. Rarely, no pathologic changes are observed.

The acute phase of the disease usually lasts five to ten days. Mortality rates are variously reported at from 10 to 40 per cent. With more prolonged and more accurate follow-up observation, an increasing incidence of permanent sequelae is being noted. It is possible that fixed abnormalities occur in more than 65 per cent of cases, and consist particularly of mental changes.[4] Frequently observed sequelae are: impaired intelligence, irritability and instability of mood, sleep disturbance, narcolepsy, metabolic and endocrine disorders, cerebellar ataxia, paresis of varying degree and extent, and epileptiform convulsions.

Since the opportunity for objective evaluation is at best limited, the utmost circumspection must be used in studying the results of any form of therapy. Non-specific measures such as control of convulsions, fever, and muscle spasm are, of course, routine. Convalescent measles serum and gamma globulin have not been found to be of value. The results of dehydration therapy are not encouraging. Results of therapy with intravenous administration of typhoid vaccine have been reported only fair. More recently cortisone and corticotropin (ACTH) have offered some promise, but more thorough trial is necessary before conclusions are warranted.[1]

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Unilateral Deafness from Pontine Lesion

A Report of Two Cases

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UNILATERAL DEAFNESS from an intrapontine lesion is so rare that students are taught not to consider it strongly as a probable occurrence. During the past year, however, the authors have observed two cases with symptoms indubitably pontine in origin. In both instances the lesions were vascular, with probable involvement of the internal auditory artery.

REPORT OF TWO CASES

CASE 1: A white meteorologist, 25 years of age, was admitted to the hospital Aug. 20, 1951 with complaint of severe ataxia of limbs and speech. The patient had never been ill until March 26, 1951. On that date he stumbled over a box and fell. (In view of subsequent developments it is a question whether he did not fall because of an acute lesion of the brain stem.) In the fall he did not strike his head or lose consciousness, yet he had a headache and ringing in the right ear that night. Next morning there was numbness in the right side of the face, and it gradually spread to include the entire right side of the body. Nausea developed and became severe but the patient did not vomit. On the fourth day dysarthria developed and the patient was unable to walk because of incoordination. On the fifth day vomiting began and as the patient was lethargic he was admitted to a hospital in Pasadena.

A report of the neurological examination carried out at the time was supplied to the authors. The blood pressure

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was 170 mm. of mercury systolic and 100 mm. diastolic. While there was no weakness of the extremities there were universal ataxia and loss of sensory perception on the entire right side of the body and face. Paralysis in the area of distribution of the left sixth and seventh nerves and complete deafness in the left ear were noted. The masseter and temporal muscles on the left side were also weak. Dysphagia and dysarthria were present. Hoffman and Babinski signs were present bilaterally. The deep reflexes were normal on the right but were increased on the left side.

Leukocytes numhered 17,700 per cu. mm. of blood, and 95 per cent of them were polymorphonuclear cells. The spinal fluid was bloody, and the total protein content was 81 mg. per 100 cc.

The initial impression was medullary thrombosis, and heparin was given intravenously by the drip technique for 15 hours. The condition of the patient became worse and tracheotomy was performed. The patient lost consciousness and remained in coma for two weeks. During that time keratitis developed in the right eye and tarsorrhaphy was done.

On Aug. 20, 1951, when the patient was first observed hy the authors he was alert and cooperative although still unable to stand because of gross ataxia, and his speech was what is commonly described as "cerehellar." There was pronounced irregularity of respiratory movements. Muscle tone and strength were normal despite the incoordination. The sense of smell, the visual fields, and the fundi of the eyes were normal. Although the pupils were somewhat dilated, they reacted normally to light, and convergence was normal. The right superior, medial rectus and inferior rectus muscles were weak. There were coarse nystagmoid movements on lateral and vertical gaze. Anesthesia of the right side of the face and paralysis of the muscles of mastication on the left were noted. Paralysis of the left side of the face and deafness in the left ear still were present but neither condition was absolute. Hemianalgesia and thermanesthesia on the right side were noted. The cerebellar signs of ataxia, asynergy, and dysmetria were greater on the right and truncal ataxia was present. Babinski's sign was evoked weakly on the right side. Superficial abdominal reflexes were absent on hoth sides.

No abnormalities were noted in examination of the blood, and the spinal fluid was clear. In an electroencephalogram "some generalized 5 per second activity" was noted and it was interpreted as "evidence of a subcortical lesion." The ataxia gradually diminished slightly, the dysarthria and dysphagia moderately. The patient was confined to a wheel chair for weeks.

The final diagnosis was acute thrombosis in the left mesencephalon and pons which became hemorrhagic when heparin was given, causing occlusion of the internal auditory artery.

Case 2: A retired army man, 68 years of age, was admitted to the hospital on Aug. 8, 1950, because of vomiting of blood-tinged material. The patient had been admitted in 1945 for the same reason and at that time had vomited daily for two months and had lost 20 pounds in weight. In 1944 the patient had had numbness about the left corner of the mouth. Gradually the numhness spread to include the left cheek and the left side of the forehead. Deafness in the left ear and drooping of the left corner of the mouth developed concomitantly. Tinnitus was not present, however, and the patient noted vertigo and nausea only upon hyperextension of the neck to look overhead. The symptoms continued without change until 1949, when the patient noticed an unsteadiness of gait and deviation to the left. There were no headaches or convulsions at any time.

The patient appeared to be poorly nourished. The hlood pressure was 140 mm. of mercury systolic and 90 mm. diastolic, and the pulse rate was 75 per minute. A right inguinal hernia was present and there was tenderness in the epigastrium.

The sense of smell was undiminished, and the visual fields and the fundi of the eyes were normal, although there were no physiological cups. The jaw deviated to the left on opening and there was weakness of lateral motion to the right (with weakness of the temporal and masseter muscles). The corneal reflex was diminished on the left and there was hypesthesia in the area of distribution of the left trigeminal nerve. The left external rectus muscle was weak, with consequent diplopia. The left corner of the mouth sagged unless voluntary movements were made. Hearing in the left ear was 55 decibels less than normal. The biceps, triceps, wrist, knee, and ankle reflexes were all normal and symmetrical, and pathological reflexes were absent. The gait was ataxic, with deviation to the left, but the direction of deviation varied with the position of the head. While motor strength was normal throughout, adiadokokinesis in the left hand was noted. Sensory perception was unimpaired. Results of vestibular tests were normal.

The blood and the urine were normal and results of tests of the blood and spinal fluid were negative for syphilis. There were no cells in the spinal fluid but the total protein content was 78 mg. per 100 cc.

Extensive roentgenographic examinations were made of the skull in both Towne and Stenvers positions, of the gastrointestinal tract, and of the chest, but the only pathologic conditions noted were calcification of the internal carotid artery and healed tuberculosis of the upper lobe of the right lung.

The patient remained in the hospital from August to January without major episode. Then a psychotic state developed, with disorientation, uncleanliness, agggressiveness, and amnesia for recent events; but there were no hallucinations or any delusions except those based on disorientation. Horizontal and vertical nystagmus developed concomitantly with the mental disturbance.

The diagnosis was cerebral arteriosclerosis with involvement of the pontine branches and left cerebellar twigs.

SUMMARY

Two cases of unilateral deafness from vascular lesion in the pons are reported.

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California MEDICINE

EDITORIAL

Cobalt Bombs

THERE HAS BEEN some discussion in the popular press in recent months of the possibilities of improved control of cancer by the use of large sources of radioactive cobalt. When such large sources are used, they require enclosure in a heavy tube or tank, sometimes called a "bomb" or "cannon."

The theoretical advantages of cobalt are that the metal is more readily available and less expensive than radium. Further, if the cost of the activating pile (perhaps $25 million) is not considered, radioactive cobalt should be less expensive than existing types of "x-ray bombs" or "cannons" (that is, of 1 or 2 thousand kilovolt apparatus). Some believe that the cobalt bomb will permit more accurate tumor dosage and more effective techniques than are possible with high voltage x-ray equipment. Finally, the commonly planned beam of the cobalt unit is an almost monochromatic one, with a mean energy of about 1.2 million electron volts.

Most of the above advantages are more theoretical than real. In actual fact, cobalt-60 is not, at present, readily available. Further, the small plaques or slugs of cobalt require many months' exposure at the Canadian atomic pile at Chalk River to become suitably radioactive without at the same time causing undue interference with the other work going on at that center. Theoretically, a source of radioactive cobalt amounting to 1,000 curies could be made in about one year at Chalk River, but in actual fact it has taken longer. Indeed, the pile had to be shut down for a certain period because of contamination difficulties. Finally, practicing radiologists have more difficulty at present in securing radioactive cobalt than they do in obtaining naturally radioactive radium or high-voltage x-ray apparatus.

Additional disadvantages to any *large* amounts of artificial or natural radioactive material set up for use in the form of bombs or cannons are the very heavy shielding required and the necessarily cumbersome nature of the unit. The walls of treatment rooms have to be enormously thick and the doors of vast weight.

One final problem involved in radioactive cobalt is the relatively short half life of this substance (approximately 5.3 years as compared with 1,750 years for radium). This means that while one might start with a 100 curie cobalt bomb, it would be down to an effectiveness of about 52 curies in five years. This would necessitate lengthening treatment times progressively during the life of the bomb. Some workers suggest that cesium-137, which has a half life of 33 years, would be the "most economical and desirable isotope for teletherapy" (Brucer). Unfortunately, no large source of that element has yet been made available for therapy.

It is important to remember that radiologists have been using rays of various energies in the treatment of cancer since 1895. Radium has been available since 1901. X-ray tubes producing rays with energies of a million volts and more have been in use

CALIFORNIA MEDICINE

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since the early 1930's. The radiations coming from radioactive cobalt are of the same type as those coming from radium and x-ray tubes. To date no one has proved that there is any curative power in the gamma rays from radium that does not exist in x-rays, and there is no reason to expect that the gamma rays from cobalt will do anything more than the gamma rays from radium. However, for certain tumor sites there may be some technical advantages in using radioactive cobalt rather than radium or high-energy x-rays.

Treatment with cobalt bombs is *not* generally available in this country at present. However, treatment with other types of ray-emitting units, both radium and x-ray, is widely available. Further, radiotherapists with equipment adequate for treating the majority of cases of cancer are at hand in most large American communities today.

In summary, therefore, radioactive cobalt bombs for medical use are still very much in the experimental stage. The type of rays emitted by these bombs does not act on cancer cells in any manner significantly different from that of filtered rays obtained from other more available x-ray and radium sources. Therefore, at least for the present, physicians treating cancer by radiological methods will continue to place major dependence on properly calibrated x-ray and radium therapy apparatus.

LETTERS to the Editor . . .

July 11, 1952

REFERENCE is made to the article by Dr. Frank Hinman, Jr., which appeared in the January 1952 issue of CALIFORNIA MEDICINE.

On page 3 of this article, the following statement appears:

> "Aureomycin, chloramphenicol and Terramycin are similar in antibacterial and other properties. In fact, it may be that chloramphenicol (which has been synthesized) is merely an active portion of the large Terramycin molecule."

The very extensive studies which have been carried out by our chemists have shown that, chemically, Terramycin differs radically from chloramphenicol, nor is the chloramphenicol molecule a component part of the Terramycin molecule. Of particular importance is the fact that Terramycin does not contain a nitrobenzene radical.

We are taking the liberty of bringing these facts to your attention since we are certain that you would not wish to have erroneous information go uncorrected.

Sincerely yours,
W. ALAN WRIGHT, M.D.
Director of Medical Service,
Chas. Pfizer & Co., Inc.

- *Dr. Wright's letter was referred to Dr. Hinman, who replied:*

The detailed chemical pattern of Terramycin had not been published at the time the article was written, and it is now apparent that the two substances are structurally unrelated, especially by the absence of the nitrobenzine radical in Terramycin. This correction is timely since chloramphenicol has very recently received adverse publicity related to aplastic anemia.

FRANK HINMAN, JR., M.D.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 395th Meeting of the Council, Los Angeles, September 6, 1952.

The meeting was called to order by Chairman Shipman in Conference Room 9 of the Biltmore Hotel, Los Angeles, at 9:30 a.m., Saturday, September 6, 1952.

Roll Call:

Present were President Alesen, President-Elect Green, Speaker Charnock, Vice-Speaker Bailey, Councilors West, Wheeler, Sampson, Morrison, Dau, Lum, Montgomery, Bostick, Pollock, Carey, Shipman, Varden and Heron, and Secretary Daniels. A quorum present and acting.

Absent for cause: Councilors Loos, Ray, Frees and Kirchner; Editor Wilbur.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Clancy, Pettis and Gillette of the C.M.A. staff; legal counsel Hassard; Mr. Ben Read of the Public Health League of California; Mr. William M. Bowman, Mr. K. L. Hamman, Drs. Donald Cass and Francis T. Hodges of California Physicians' Service; county society executive secretaries Bannister of Orange and Thompson of San Joaquin; Ned Burman of public relations counsel; committee chairmen Dr. Francis J. Cox, John R. Upton, Christopher Leggo, Henry A. Randel, John B. Hamilton and Lewis T. Bullock; Drs. Frank Tallman and G. H. Crawfis of the State Department of Mental Hygiene; Dr. Wilton L. Halverson of the State Department of Public Health; Drs. Samuel R. Sherman and Garnett Cheney of the San Francisco Medical Society; Dr. J. Norman O'Neill and Mr. Thomas Welch.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 394th Council meeting, held June 21, 1952. were approved.

(b) On motion duly made and seconded, minutes of the 232nd Executive Committee meeting, held June 21, 1952, were approved.

(c) On motion duly made and seconded, minutes of the 233rd Executive Committee meeting, held August 10, 1952, were approved.

2. *Membership:*

(a) A report of membership as of August 30, 1952, was received and ordered filed.

(b) On motion duly made and seconded, 107 members whose 1952 dues had been received since June 21, 1952, were reinstated to membership.

(c) On motion duly made and seconded, Dr. Charles H. Peppers of Riverside County was elected to Retired Membership.

(d) On motion duly made and seconded in each instance, eight applicants were elected to Associate Membership. These were: Wm. Lee Anderson, Alameda-Contra Costa; F. E. Davis and Robert M. Taylor, Kern County; Stanley Coffey, Wm. Y. Hollingsworth, Napa County; John A. Barger, Orange County; Irvin I. Schatz and John Long Wilson, San Francisco County.

LEWIS A. ALESEN, M.D.	President
JOHN W. GREEN, M.D.	President-Elect
DONALD A. CHARNOCK, M.D.	Speaker
WILBUR BAILEY, M.D.	Vice-Speaker
SIDNEY J. SHIPMAN, M.D.	Council Chairman
ALBERT C. DANIELS, M.D.	Secretary-Treasurer
DONALD D. LUM, M.D.	Chairman, Executive Committee
DWIGHT L. WILBUR, M.D.	Editor
JOHN HUNTON	Executive Secretary
ED CLANCY	Director of Public Relations

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(e) On motion duly made and seconded in each instance, seven applicants were voted a reduction of dues because of illness or postgraduate study.

3. *Financial:*

(a) A report of bank balances as of August 30, 1952, was received and ordered filed.

(b) Discussion was held on the request of a county society for reimbursement for costs incurred in collecting A.M.A. membership dues. On motion duly made and seconded, it was voted to table the request.

(c) Statements for legal services, amounting to $825 and $3,950.69 for litigation in San Diego and $750 for litigation in Los Angeles directed against the Association and two other defendants, were presented. On motion duly made and seconded, it was voted unanimously to approve payment of all three statements.

4. *Committee on Hospitals, Dispensaries and Clinics:*

Dr. John B. Hamilton, chairman of the Committee on Hospitals, Dispensaries and Clinics, presented Drs. Frank Tallman and G. H. Crawfis, medical director and assistant of the State Department of Mental Hygiene. Dr. Tallman, discussed the work of his department, reported that an estimated 84 to 86 per cent of patients in state hospitals could be returned to civilian life under adequate staff conditions and reported on a program to notify the family physician when a state hospital patient was to be returned to his home. He asked the cooperation of the Association in obtaining physicians at adequate compensation.

Dr. Hamilton reported for the committee, requesting approval of a proposed Department of Mental Hygiene ruling which would permit staff physicians to consult with local physicians but not establish private practices beyond their state duties. On motion duly made and seconded, this report was approved.

On motion duly made and seconded, it was voted to approve a suggestion that the chief of the Department of Mental Hygiene be required by law to possess a Doctor of Medicine degree.

5. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, reported that the insurance carriers had offered a 10 per cent increase in the existing level of industrial fees. He presented a statement which reviewed the history of industrial fees since 1918 which he requested authority to use in publicizing the studies of his committee and in appearing before an interim committee of the State Senate.

INTERIM SESSION

C.M.A. HOUSE OF DELEGATES

December 6-7, 1952

San Francisco

On motion duly made and seconded, it was voted to decline the offer of a 10 per cent increase in industrial fees, as inadequate and inequitable under present economic conditions.

On motion duly made and seconded, Dr. Cox was given authority to use his prepared statement after editorial review.

On motion duly made and seconded, Dr. Cox was voted authority to appear before the Senate Interim Committee.

6. *California Physicians' Service:*

Dr. Francis T. Hodges, Secretary of the C.P.S., reported that as of July 31, 1952, C.P.S. had 689,762 beneficiary and 10,878 physician members. He also reported on the recommendations of the C.P.S. Study Committee which are under consideration or actually in practice by the C.P.S. Board of Trustees.

Mr. K. L. Hamman, treasurer of C.P.S., reported on the financial statement.

7. *San Francisco Medical Society:*

Dr. Samuel R. Sherman, representing the San Francisco Medical Society, reported on the consideration given a proposal of the San Francisco Labor Council that health centers be established for A. F. of L. union members and their families. The decision of the committee he heads calls for (1) free choice of physician in all health insurance plans, (2) active opposition to the proposed health centers, (3) sound actuarial principles in all programs, and (4) medical control of all such plans.

Dr. Garnett Cheney, representing the president of the San Francisco Medical Society, further reported on this proposal and on a suggested plan under which medical service can be delivered to wage earners under acceptable conditions. He also reported that efforts are being made to develop a new approach to the question of making up fee schedules.

8. *Committee on Rural Health:*

Dr. Henry Randel, chairman of the Committee on Rural Health, reported on preliminary meetings held with representatives of the Agricultural Extension Division of the University of California, the State Grange, the California Federation of Farm Bureaus and the State Parent-Teachers Association. He suggested that a statewide Health Council consisting of two representatives of each of these organizations, plus two representatives of his committee, be established, and the Council approved this suggestion.

9. *Committee on Psychology:*

Dr. Lewis T. Bullock, chairman of the Committee on Psychology, detailed a proposed legislative bill developed by his committee and discussed the terms of the bill. On motion duly made and seconded, it was voted to refer this proposal to the Committee on Public Policy and Legislation and to suggest that a joint meeting of the two committees be arranged.

10. *State Department of Public Health:*

Dr. Wilton Halverson, State Director of Public Health, reported that about 1,200 polio cases have so far been reported, about half the seasonal total of the epidemic of 1950, and that a sharp rise in cases is now apparent, indicating the possibility of a later seasonal tapering off than is usual. On encephalitis, 150 cases were reported in July and 350 in August. New cases are now dropping. There have been 36 deaths to date. Dr. Halverson outlined the methods being used to combat this disease and reported on blood testing being done on unexplained fever cases in several areas.

11. *Committee on Industrial Health:*

Dr. Christopher Leggo, chairman of the Committee on Industrial Health, presented a set of suggested standards for industrial nursing prepared by his committee and another set prepared by the A.M.A. and other national organizations. On motion duly made and seconded, it was voted to accept his report, including the proposed standards.

12. *Blood Bank Commission:*

Dr. John R. Upton, chairman of the Blood Bank Commission, reported that some of the blood banks may require extensions on the repayment of loans by the Association. He also reported that the eleven banks in the system had produced 59,325 units for civilians and 118,387 for the armed forces in the first six months of 1952. Present capacity of these banks is about 120,000 civilian units per year, which could be augmented by about 430,000 additional units for national purposes without increases in personnel.

13. *Public Policy and Legislation:*

Mr. Read reported on the November elections and discussed some of the ballot proposals. On motion duly made and seconded, it was voted to oppose Proposition No. 11.

14. *Medical Services Commission:*

A proposed program of the Medical Services Commission, embodying seven points, was presented and on motion duly made and seconded, was approved.

On motion duly made and seconded, it was unanimously voted to appropriate $5,000 as initial funds for the commission and to notify the commission that the Association is prepared to offer all services of its facilities and personnel to the commission until such time as a definite program is outlined and approved.

Time and place of next meeting:

The time and place of the next meeting were left at the call of the chair.

Sidney J. Shipman, M.D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

Proposed Constitutional Amendments

(Second Publication)

Following are the proposed amendments to the Constitution of the California Medical Association that were introduced at the 1952 Annual Session and were carried over for action at the Interim Session. Both have been referred to Reference Committee No. 4, which is to make its report upon them available to delegates at least 30 days before the opening of the 1952 Interim Session in San Francisco, December 6, 1952. California Medical Association members who wish to record opinions on any of the proposed amendments may send them to the chairman of Reference Committee No. 4, Arthur A. Kirchner, M.D., 2007 Wilshire Boulevard, Los Angeles.

Submitted by Lyle G. Craig for Reference Committee No. 3, Interim Session, December, 1951.

Resolved, That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 1, the first sentence be amended by deleting the word "regular" and inserting in its stead the word "Annual," so that this first sentence shall read:

"At each Annual Session the House of Delegates shall, by a majority vote, fix the annual dues to be paid by members of the Association for the ensuing calendar year."

The remainder of Section 1 shall be unchanged.

* * *

Submitted by Lyle G. Craig for Reference Committee No. 3, Interim Session, December, 1951.

Resolved: That the Constitution of the California Medical Association be amended as follows:

That in Article IV, Section 5, the first sentence be amended by striking out the word "regular" and inserting in its stead the word "Annual," so that the first sentence shall read:

"At each Annual Session of the House of Delegates the Council shall submit to it an itemized budget stating the proposed expenditures of the Association for the ensuing year."

The remainder of Section 5 shall be unchanged.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 24-27, 1953

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) not later than November 15, 1952.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1952. (No exhibit shown in 1952, and no individual who had an exhibit at the 1952 session, will be eligible until 1954.)

Motion Pictures

There will be facilities available for motion pictures. If you would like to exhibit, send your application to Dr. A. E. Smith, 1930 Wilshire Boulevard, Los Angeles. The deadline is December 1, 1952.

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy	*Norman Shure*	6317 Wilshire Boulevard, Los Angeles 48
Anesthesiology	*Joseph H. Failing*	475 Bueno Vista Street, San Marino 9
Dermatology and Syphilology	*Frances Keddie*	300 Homer Avenue, Palo Alto
Eye, Ear, Nose and Throat—		
Eye	*Alfred R. Robbins*	1930 Wilshire Boulevard, Los Angeles 5
ENT	*Francis A. Sooy (Asst. Sec.)*	490 Post Street, San Francisco 2
General Medicine	*William D. Evans*	10655 Riverside Drive, North Hollywood
General Practice	*A. Bradford Carson*	1515 Fruitvale Avenue, Oakland 1
General Surgery	*Arthur C. Pattison*	960 East Green Street, Pasadena
Industrial Medicine and Surgery	*Dan Kilroy (Asst. Sec.)*	3300 Third Avenue, Sacramento
Obstetrics and Gynecology	*Harold K. Marshall*	229 North Central Avenue, Glendale 3
Pathology and Bacteriology	*A. R. Camero*	679 South Westlake Avenue, Los Angeles 5
Pediatrics	*Clement J. Molony*	416 North Bedford Drive, Beverly Hills
Psychiatry and Neurology	*A. E. Bennett*	2000 Dwight Way, Berkeley 4
Public Health	*Charles E. Smith*	U. C. School of Public Health, Berkeley 4
Radiology	*Calvin L. Stewart*	2330 First Avenue, San Diego 1
Urology	*James A. May*	2001 Fourth Avenue, San Diego 1

In Memoriam

Collischonn, Philip. Died in San Francisco, August 13, 1952, aged 84. Graduate of the University of California Medical School, Berkeley-San Francisco, 1891. Licensed in California in 1892. Dr. Collischonn was a retired member of the San Francisco Medical Society, and the California Medical Association.

✣

Cowgill, Charles H. Died in Lynwood, August 3, 1952, aged 68, of cerebral hemorrhage. Graduate of the Minneapolis College of Physicians and Surgeons, Minnesota, 1908. Licensed in California in 1916. Dr. Cowgill was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Cruikshank, George H. Died in San Diego, August 27, 1952, aged 81. Graduate of Long Island College of Medicine, Brooklyn, N. Y., 1899. Licensed in California in 1900. Dr. Cruikshank was a member of the San Diego County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Harris, Squire O. Died in Bakersfield, January 20, 1952, aged 72, of carcinoma. Graduate of Creighton University School of Medicine, Omaha, Neb., 1910. Licensed in California in 1943. Dr. Harris was a member of the Kern County Medical Society, the California Medical Association, and the American Medical Association.

✣

Northrop, Robert S. Died in Eureka, July 28, 1952, aged 74, of injuries rceived in an automobile accident. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1922. Licensed in California in 1922. Dr. Northrop was a member of the Napa County Medical Society, the California Medical Association, and the American Medical Association.

✣

Root, Peter N. Died in Bakersfield, March 11, 1952, aged 65, of arteriosclerosis. Graduate of the University of Oregon Medical School, Portland, 1924. Licensed in California in 1924. Dr. Root was a member of the Kern County Medical Society, the California Medical Association, and the American Medical Association.

✣

Strahlmann, Louis. Died in San Diego, May 12, 1952, aged 60, of coronary artery disease. Graduate of Harvard Medical School, Boston, 1917. Licensed in California in 1920. Dr. Strahlmann was a member of the San Diego County Medical Society, the California Medical Association, and the American Medical Association.

✣

Wehrly, John. Died in Santa Ana, August 14, 1952, aged 84. Graduate of Missouri Medical College, St. Louis, 1890. Licensed in California in 1901. Dr. Wehrly was a member of the Orange County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Witten, Paul. Died in San Fernando, August 1, 1952, aged 43, after an emergency appendectomy. Graduate of Northwestern University Medical School, Chicago, 1937. Licensed in California in 1937. Dr. Witten was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Q. & A. on C. P. S.

Question: Does C.P.S. pay for plastic surgery?

Answer: The general policy is that C.P.S. will be liable for plastic surgery if it is performed primarily to correct a functional disturbance, providing the condition is not excluded by the terms of the contract. For instance, in cases of cleft palates and harelips, even though surgery would be performed, C.P.S. would not assume liability since these are congenital malformations which are not a benefit of a C.P.S. contract.

Question: In many cases C.P.S. physician members treat C.P.S. "under income ceiling" patients for accidental injuries. If the patient later collects damages, can the physician member bill for an additional amount?

Answer: In accordance with the terms as set forth in the "subrogation clause" contained in all C.P.S. contracts, the attending physician is not obligated to accept the sum by C.P.S. as full and final payment if the member treated recovers damages from a third party or insurance carrier.

Question: Is preoperative care, which might possibly include consultation or x-rays, a benefit of the C.P.S. surgical contract?

Answer: No. The C.P.S. contract becomes effective at the time actual surgery is performed. For those C.P.S. members who have surgical coverage only, preoperative care is a personal responsibility.

Question: Am I able as a private physician to join the Blue Shield Plan as a beneficiary member, and if this is possible may I purchase hospital coverage only?

Answer: All physicians or members of their staff are eligible to joint C.P.S.-Blue Shield as beneficiary members; however, hospital-only coverage is not available. All C.P.S. contracts must include coverage for professional service, i.e., surgical, medical-care-while-hospitalized or two-visit-deductible.

Question: Why is it necessary for anesthetists and surgical assistant to indicate the length of time of their actual services when billing C.P.S.?

Answer: California Physicians' Service payments for anesthetists and surgical assistants are based on the length of time of their respective services. As an example, C.P.S. pays a surgical assistant at major operations twenty dollars for the first two hours. If the length of time is not indicated, it is necessary to return the billings to the C.P.S. doctor in order to properly determine the amount of C.P.S. liability.

Question: At times patients advise that C.P.S. rejects requests for x-rays while they are hospitalized and it is my understanding that x-rays are a benefit of C.P.S. hospital contracts.

Answer: X-rays that are incidental to the admitting diagnosis are a benefit of the C.P.S. contract; however, C.P.S. will not pay for x-rays that would ordinarily be done on an ambulatory basis. X-rays must be related to the condition requiring hospitalization to be payable by C.P.S.

Question: Is it possible to obtain C.P.S. coverage, other than on a group basis, through a place of employment?

Answer: Yes. Individual family plan coverage is now available if the interested person is under the age of sixty and if the subsequent requirements of membership application can be met. Once a person is enrolled in the individual plan he may receive full benefits, at a slight increase in his cost of dues, up through and including any age over sixty.

Question: When a C.P.S. member leaves his place of employment and transfers to the direct payment program, where the two-visit-deductible coverage is no longer available, is the medical-care-while-hospitalized contract considered a new contract?

Answer: If a member had two-visit-deductible coverage under his group contract and received maximum benefits under that contract for any condition, he would still be eligible for completely new benefits for the same condition if he should take out medical-care-while-hospitalized on the direct payment contract.

Question: A doctor's receptionist asks the question, "If a member is admitted to a hospital prior to the effective date of membership, will C.P.S. assume liability for any portion of the services rendered during that period of hospitalization?"

Answer: No. C.P.S. contracts exclude all professional services and hospital care rendered during the period of hospitalization immediately following such admission.

Question: On what basis was I charged by the Veterans Administration for a prescription I wrote for my veteran patient?

Answer: A veteran prescription blank obtained from your pharmacy contains the following certification: "I am authorized to treat and prescribe for the above-named Veterans Administration patient." The Veterans Administration will always pay the pharmacy for such a prescription written by you on the basis of this certification. If you have not been authorized to treat the veteran, be sure that you issue prescriptions to him on a prescription blank that does not contain a certification. This will insure the veteran's filling the prescription at his own expense and avoid any liability on your part because of payment by the Veterans Administration on the basis of your certification.

NEWS & NOTES

NATIONAL · STATE · COUNTY

FRESNO

The Central Valley Psychiatric Society was formed last month by physicians who are members of the American Psychiatric Association. Officers of the new organization are: Dr. Mark Zeifert of Fresno, president; Dr. Rudolph Toller of Stockton, vice-president; Dr. V. S. Briden of Fresno, secretary-treasurer.

Dr. Zeifert said that "it is hoped that this will be the first district branch of the American Psychiatric Association on the West Coast."

SAN FRANCISCO

A grant of $22,259 to Stanford University School of Medicine for continued support of **training in diagnosis and treatment of cancer** was announced recently by the U. S. Public Health Service. A grant of $25,000 for the same purpose was made to the College of Osteopathic Physicians and Surgeons, Los Angeles.

* * *

Dr. Norman N. Epstein of San Francisco was elected president of the Pacific Dermatologic Association at the recent annual meeting of the organization in San Francisco. Dr. Louis G. Jekel of Phoenix was elected vice-president, and Dr. Paul Williams of Seattle assistant secretary. Dr. Ervin Epstein of Oakland was reelected secretary-treasurer.

More than 180 dermatologists were present at the meeting. The 1953 meeting is to be held in Seattle in July.

* * *

Dr. Charles Huggins, director of the Ben May Laboratory for Cancer Research and professor of surgery at the University of Chicago, has been appointed **visiting professor of oncology** at the University of California School of Medicine, San Francisco, for 1952. He will participate in the teaching of undergraduate medical students, deliver four lectures, and engage in the general program of the school's Cancer Research Institute.

* * *

Dr. Ernest Jawetz, while in the British Isles on sabbatical leave from the University of California School of Medicine where he is associate professor of microbiology and lecturer in medicine and pediatrics, lectured at Oxford University, delivered an Almroth Wright lecture at St. Mary's Hospital at the invitation of Sir Alexander Fleming, and gave the Macarthur postgraduate lecture at the University of Edinburgh.

SAN JOAQUIN

The program for the remaining five of eight **postgraduate lectures** scheduled for 1952 by the Stockton Postgraduate Study Club follows:

October 16: The Problem of Benign Pancreatic Disease—Albert Snell, M.D., of the Palo Alto Clinic, Palo Alto.

October 23: The Acute Abdomen and Its Management—Roy Cohn, M.D., associate professor of surgery, Stanford School of Medicine, San Francisco.

October 30: Treatment of Common Communicable Diseases—Edward Shaw, M.D., clinical professor of pediatrics, University of California School of Medicine, San Francisco.

November 13: Recent Advances in the Treatment of Hypertension—Maurice Sokolow, M.D., associate professor of medicine, University of California School of Medicine, San Francisco.

November 27: The Problem of Alcoholism—Paul Gliebe, M.D., assistant professor of psychiatry, University of California School of Medicine, San Francisco.

STANISLAUS

Dr. E. G. Allen, a general practitioner in Patterson since 1923, was publicly honored there September 21 in a community-wide celebration of Dr. Allen Day sponsored by the local chamber of commerce to pay tribute to the physician's "many years of unselfish service to the community." A parade of "Dr. Allen's babies," some of the more than 2,000 he delivered in 29 years of practice, opened the celebration.

GENERAL

The Committee on Pesticides of the American Medical Association currently is undertaking a country-wide toxicological study of cases of **poisoning resulting from the use of insecticides,** rodenticides, fungicides, weed killers, fumigants, repellents and related types of chemicals used in agriculture and the home. This information will be used to expand its permanent file of such cases for use by physicians and allied medical personnel.

Since much of the committee's information on pesticide poisoning has been compiled from unpublished isolated cases which were brought to its attention, the committee is appealing to physicians to submit records on cases of nonfatal and fatal poisonings from pesticides. The committee pointed out that summary data on the pertinent facts of the poisonings and the circumstances of their occurrence would be sufficient in most instances.

* * *

Hypertension and arrhythmias will be the subjects of the Fourth Annual Symposium of the **Washington Heart Association** and the Washington State Department of Public Health which is to be held November 7-8 in Seattle. Guest speakers are Dr. Myron Prinzmetal of Los Angeles, Dr. Stanley E. Bradley of New York, Dr. Robert W. Wilkin of Boston and Dr. Eugene B. Ferris of Cincinnati. There will be no registration fee.

* * *

The American Geriatrics Society recently announced that effective with January 1953 it will publish its own official periodical, *The Journal of the American Geriatrics Society.* Dr. Willard Thompson, of Chicago, president of the Society, will edit the journal.

* * *

The American Urological Association is offering awards totalling $1,000 (first prize of $500, second prize of $300 and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Jefferson, St. Louis, Missouri, May 11-14, 1953.

Full particulars may be had from the executive secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before January 15, 1953.

* * *

Volume I, Number 1, of a new monthly Journal entitled **Obstetrics and Gynecology,** sponsored by the American Academy of Obstetrics and Gynecology, will appear in January, 1953. It is believed to be the first new monthly periodical exclusively devoted to this field to be launched in over thirty years, according to an announcement by Dr. Carl P. Huber, president of the Academy. The new journal will publish original articles, reviews, clinical notes, editorials, and book reviews covering the entire range of clinical obstetrics and gynecology. Dr. Ralph A. Reis of Chicago is the editor, and associate editors are Doctors F. Bayard Carter, R. Gordon Douglas, Ludwig A. Emge, Arthur T. Hertig, S. Leon Israel, William F. Mengert, Norman F. Miller, and Herbert E. Schmitz.

Papers to be considered for publication should be addressed to the Editor, Dr. Ralph A. Reis, 104 South Michigan Avenue, Chicago 3, Illinois.

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Reserve officers of the medical services of the Army, Navy, and Air Force will be given complete information on all new directives, including pending Congressional legislation, governing their commissions, active duty requirements and retirement benefits in one of the feature presentations of the 59th annual meeting of the Association of Military Surgeons which will be held at the Statler Hotel, Washington, D.C., November 17-19, under the presidency of Major General Harry G. Armstrong, Surgeon General of the Air Force. Point credits for retirement will be given all eligible reserve officers attending the scientific session, it was announced by the Association of Military Surgeons of the United States.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA AT LOS ANGELES SCHOOL OF MEDICINE

Obstetrics and Gynecology—Medical Library, fourth floor C wing, Wadsworth General Hospital, Veterans Administration Center, West Los Angeles.

Dates: November 12, 13, 14, 1952—9-12 a.m., 2-5 p.m.

Fee: $50.00.

PROGRAM

November 12: 9:00-10:30—Danger Signs in Obstetrics—Alexander Glyn-Davies, M.D., formerly associate professor of obstetrics and gynecology, University of Sheffield, England.

10:30-12:00—Diabetes and Pregnancy—Blake Watson, M.D., assistant clinical professor of obstetrics and gynecology, School of Medicine, University of California, Los Angeles.

2:00-3:30—Carcinoma of the Uterus—Daniel Morton, M.D.

3:30-5:00—Urinary Tract Complications in Obstetrics and Gynecology—Willard Goodwin, M.D., associate professor of surgery, School of Medicine, University of California, Los Angeles.

November 13: 9:00-10:30 — Carcinoma of the Ovary — James Nolan, M.D.

10:30-12:00 — The Induction of Labor — Earl King, M.D., assistant professor of obstetrics and gynecology, University of California Medical Center, San Francisco.

2:00-3:30 — Present Status of Rh Incompatibility — Bruce Rolf, M.D.

3:30-5:00—Bleeding in the Third Trimester of Pregnancy—Earl King, M.D.

November 14: 9:00-10:30—Pre- and Post-Operative Care in Gynecology—Earl King, M.D.

10:30-12:00 — Indications for Hysterectomy — James Doyle, M.D.

2:00-3:30—Cesarean Section—Earl King, M.D.

3:30-5:00—Vulval Fluorescence as a Diagnostic Tool—Sidney Margolese, M.D., instructor, department of medicine, University of Southern California School of Medicine.

5:00—Question Period—Drs. King, Davies, Doyle and Morton.

Hematology in General Practice—Wadsworth General Hospital, Room 113, Veterans Administration Center, West Los Angeles.

Dates: November 5-December 10, 1952. Wednesday afternoons 2-4 p.m.

Fee: $30.00.

PROGRAM

This course is designed to emphasize major aspects of hematology as encountered in clinical practice. It will be centered upon case material available at Wadsworth General Hospital and general discussion of diagnosis and management of specific hematologic problems: Diagnosis and Management of the Hemorrhagic Disorders; Diseases of the Spleen and the Medical Indications for Splenectomy; Hemolytic Anemias; Iron Deficiency Anemia and Iron Metabolism; Macrocytic Anemias; Diseases Involving Changes in the White Blood Cell Picture; the Leukemias; Lymphomas and Multiple Myeloma.

Instructional Staff: William N. Valentine, M.D., associate professor of medicine, School of Medicine, Los Angeles. William S. Adams, M.D., associate professor of medicine, School of Medicine, Los Angeles. Phillip Sturgeon, M.D., assistant professor of pediatrics, University of Southern California School of Medicine. Charles G. Craddock, Jr., M.D., assistant professor of medicine, University of California School of Medicine, Los Angeles.

Electrocardiography—Business Administration and Economics Building (BAE), Los Angeles Campus (Westwood), University of California at Los Angeles.

Dates: November 5-21, 1952, Wednesdays and Fridays, 7:30-9:30 p.m.

Fee: $20.00.

PROGRAM

November 5—Presentation of the dipole concept and Einthoven's theories. Discussion of methods for taking unipolar extremity and precordial leads. Mathematical relationship between unipolar extremity and standard leads. The specialized tissues of the heart, anatomy and physiology.

November 7—Axis deviation. Right and left ventricular enlargement. Deflections of abnormally small and of abnormally large amplitude.

November 12—Bundle branch block, standard and precordial leads.

November 14—The T deflection. Primary and secondary abnormalities of T. The ventricular gradient. Pulmonary embolism.

November 19—Angina pectoris, coronary occlusion, changes in standard and precordial leads.

November 21—Esophageal leads. Intracardiac leads. General discussion and questions.

Contact: Application or requests for information concerning this course should be made to: Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, Calif.

COLLEGE OF MEDICAL EVANGELISTS

Part-time Refresher Courses 1952-1953

Anesthesiology (4 months). Full time. Vacancy occurs each two months. Facilities limited to two students. Tuition: $300.00. Dr. Forrest E. Leffingwell and associates.

Roentgenology (32 periods). Tuesdays: 8:00-9:00 a.m., September 30, 1952, through June 2, 1953. Tuition: $100.00. Dr. Walter L. Stilson and associates.

General and Surgical Pathology (190 hours). Tuesdays: 1:00-5:00 p.m. and Thursdays: 1:00-3:00 p.m., Sept. 30, 1952, through June 4, 1953. Tuition: $175.00. Dr. Albert E. Hirst, Jr., and associates.

General Medicine (12 periods). Tuesdays: 7:30-9:00 p.m., Sept. 30 through Dec. 16, 1952. Tuition: $50.00. Dr. James J. Short and associates.

Traumatic Surgery (22 periods). Tuesdays and Wednesdays: 8:00-9:30 p.m., Sept. 30 through Dec. 10, 1952. Tuition: $50.00. Dr. G. Mosser Taylor and associates.

Surgical Anatomy (66 periods). Dissection, Demonstration, and Lectures. Mondays and Wednesdays: 1:00-5:00 p.m., Sept. 29, 1952, through June 3, 1953. Tuition: $250.00. Drs. Jacob Janzen, Elton L. Morel, and associates.

Surgical Anatomy (34 periods). Demonstration and Lectures. Wednesdays: 3:00-5:00 p.m., Oct. 1, 1952, through June 3, 1953. Tuition: $100.00. Drs. Jacob Janzen, Elton L. Morel, and associates.

Physical Medicine (8 periods). Wednesdays: 8:00-9:00 a.m., Oct. 1 through Nov. 19, 1952. Tuition: $30.00. Dr. Fred B. Moor and associates.

Surgical Physiology (33 periods). Tuesdays: 9:00 a.m.-12 noon, Sept. 30, 1952, through June 2, 1953. Tuition: $75.00. Dr. Harry A. Davis.

General Management of Diabetes Mellitus (11 periods). Thursdays: 9:00-11:30 a.m., Los Angeles County General Hospital. Oct. 2 through Dec. 18, 1952. Tuition: $60.00. Dr. James J. Short.

Genito-Urinary Diseases. Daily: 10:00 a.m. to 2:00 p.m., Nov. 17 through 21, 1952. Tuition: $60.00. Classes are conducted at the Ambassador Hotel, Los Angeles, under the auspices of the Los Angeles Urological Society.

Surgical Diseases of the Peripheral Vascular System (8 periods). Tuesdays: 7:00-8:30 p.m., Jan. 6 through Feb. 24, 1953. Tuition: $30.00. Dr. Carl H. Talmadge and associates.

Differential Diagnosis of Internal Diseases (12 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital. Jan. 6 through March 24, 1953. Tuition: $50.00. Dr. Julius Bauer.

Diseases of the Chest (2 days). Thursday and Friday. Los Angeles County Medical Association. Jan. 22 and 23, 1953. Tuition: $15.00. Lecturers to be announced.

Dermatology (12 periods). Wednesdays: 8:00-9:30 p.m., Jan. 7 through March 25, 1953. Tuition: $40.00. Dr. Clement E. Counter and associates.

General Urology (9 periods). Wednesdays: 8:00-9:30 p.m., Jan. 7 through March 4, 1953. Tuition: $35.00. Drs. Roger W. Barnes, R. Theodore Bergman, and associates.

Proctology (10 periods). Thursdays: 8:00-10:00 a.m., Jan. 8 through March 12, 1953. Tuition: $50.00. Dr. Malcolm R. Hill and associates.

Otolaryngology (8 periods). Tuesdays: 8:00-9:30 p.m., Feb. 10 through March 31, 1953. Tuition: $30.00. Dr. H. James Hara and associates.

Histology and Histopathology of the Eye (15 periods). Wednesdays: 7:30-9:30 p.m., Feb. 25 through June 3, 1953. Tuition: $60.00. Dr. I. G. Sommers.

Varicose Veins (6 periods). Tuesdays: 7:00-9:00 p.m., March 3 through April 21, 1953. Tuition: $25.00. Dr. Carl H. Talmadge and associates.

Gynecology (10 periods). Wednesdays: 8:00-9:00 a.m., March 25 through May 27, 1953. Tuition: $30.00. Dr. Dell H. Haughey and associates.

Operative Surgery (8 periods). Tuesdays: 7:00-9:00 p.m., April 7 through May 26, 1953. Tuition: $150.00. This course in operative surgery will be a combined lecture and laboratory course designed to provide opportunity for the student physician to personally perform standard major operations. Dr. Harry A. Davis.

Endocrinology (8 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital. April 7 through May 26, 1953. Tuition: $30.00. Dr. Julius Bauer.

Thoracic Surgery (8 periods). Wednesdays: 8:00-9:30 p.m., April 15 through June 3, 1953. Tuition: $30.00. Dr. Lyman A. Brewer.

Minor Orthopedic Surgery (8 periods). Thursdays: 8:00-9:30 p.m., April 16 through June 4, 1953. Tuition: $30.00. Dr. Alonzo J. Neufeld.

Diseases and Injuries of Bones and Joints. Full time. July 6 through 31, 1953. Tuition: $100.00. Drs. G. Mosser Taylor, Alonzo J. Neufeld, and associates.

Contact: For further information, write Chairman, Section on Graduate and Postgraduate Medical Education, College of Medical Evangelists, 312 North Boyle Ave., Los Angeles 33, Calif.

INFORMATION

The Stanford Convalescent Home

In response to inquiries from physicians about the Stanford Convalescent Home the following information has been prepared:

Located near Palo Alto, Calif., on the Stanford University property, the Home is an entirely independent, non-profit institution established to provide convalescent care for children between the ages of four and twelve years. Patients are accepted from any physician, hospital or clinic in the Northern California area on approval of the medical director. The kinds of patients accepted include those with rheumatic fever, allergic disorders, convalescent poliomyelitis, recurrent or chronic respiratory infections, and especially simple malnutrition or debility in children from inadequate homes or who are convalescing from a recent acute illness. Patients with active tuberculosis are not accepted; but tuberculous children with healing of the primary complex and with negative gastric washings who are in need of convalescent care are taken on special approval of the medical director.

The Convalescent Home is supported in part by a number of public and private agencies and benefactors so that the charge per patient is adjusted according to the economic circumstances of the family and other factors. The range is from no charge to the full rate of $240 per month. Application may be made directly to the medical director, Dr. Harold K. Faber, at Stanford University Hospital, San Francisco, on the regular admission blank provided, or through the medical social worker, Miss Adele Moroney, at the admission office of the Home at 2412 Clay Street, San Francisco, phone WEst 1-7535.

The length of stay varies from a few weeks to many months, depending upon the nature of the illness and the progress of the particular child. Few patients remain longer than a year. Insofar as possible the visiting staff will carry out the treatments recommended by the referring physician. Special diets, including elimination diets for patients with allergic disease, are followed. Physiotherapy is available through the cooperation of the Stanford School of Physiotherapy. X-ray, laboratory work, and consultations in the medical specialties are available through local visiting and attending doctors and are used freely. Limited dental service is available.

Monthly progress reports to the referring physician keep him informed of the patient's condition while at the Home.

The Convalescent Home is part of the Palo Alto Unified School District so that the child's education can proceed in an uninterrupted fashion. A very active occupational therapy department is under the direction of a full-time therapist. Craftwork and other interesting work is provided for all children and is used as an adjuvant to medical therapy whenever possible. The home has its own Cub pack, Scout troop, Brownie group, etc. Parties and special events are held frequently.

Further information and application blanks may be obtained from the medical social worker at the admitting office of the home, 2412 Clay Street, San Francisco (phone WEst 1-7535), or from the superintendent, Mrs. Ruth Atwood, R.N., at the Stanford Convalescent Home, Stanford, Calif. (phone DAvenport 3-6158). Physicians or others interested in visiting the home are welcome at any time.

Warning Label on Chloromycetin

The Food and Drug Administration of the Federal Security Agency recently announced its decision to permit the continued distribution of the antibiotic drug Chloromycetin under revised labeling that will caution physicians explicitly against its indiscriminate use.

Charles W. Crawford, commissioner of food and drugs, said: "The Administration has weighed the value of the drug against its capabilities for causing harm and has decided that it should continue to be available for careful use by the medical profession in those serious and sometimes fatal diseases in which its use is necessary."

The commissioner said that "FDA's decision was similar in principle to one made every day by thousands of doctors throughout the country who weigh the need for a potent drug against the possibility of harm to the patient."

Reports of blood disorders attributed to Chloromycetin led to a nationwide survey by the FDA late in June of the case records in hospitals and clinics. The case histories turned up by this survey were referred to the National Research Council for its aid in evaluating the information. FDA's decision was based on the findings and recommendations of a special committee of the Research Council's Division of Medical Sciences.

The committee of outstanding authorities on hematology and infectious diseases was headed by Dr. John Holmes Dingle, professor of preventive medicine at Western Reserve University. Cleveland.

The committee considered the records of 410 cases of serious blood disorders, of which 177 were definitely known to have been associated with the use of Chloromycetin.

In 61 cases Chloromycetin was the only drug administered. In the remaining 116 cases other drugs had also been given. In both groups fatalities totaled 50 per cent, attributable to aplastic anemia and related conditions in which the bone marrow has lost its ability to manufacture both red and white cells of the blood.

A group of 168 cases, including 97 cases of aplastic anemia, was eliminated from consideration by the committee because it was determined that Chloromycetin had not been administered. A remaining group of 65 cases in which Chloromycetin may or may not be involved, continues under investigation.

It is estimated that since the drug came on the market in 1949, it has been administered to something like eight million patients.

The report of the special committee addressed to Dr. Irvin Kerlan, acting medical director of the FDA, by Dr. M. C. Winternitz, M.D., chairman of the National Research Council's Division of Medical Sciences, read as follows:

"In your letter of 23 July you requested that the National Research Council appoint a group to review and evaluate the information assembled by the Food and Drug Administration on the incidence of serious blood dyscrasias associated with the use of chloramphenicol.

"An *ad hoc* conference was held on 6 August and reviewed all available data presented by the Food and Drug Administration and by Parke, Davis and Company.

"The consensus of the conference was as follows:

"1. Certain cases of serious blood dyscrasias (aplastic anemia, thrombocytopenic purpura, granulocytopenia, and pancytopenia) have been associated with the administration of chloramphenicol.

"2. Although this complication has thus far been uncommon, it is sufficiently important to warrant a warning on the label of packages of the drug and in advertisements of the drug and the recommendation that chloramphenicol not be used indiscriminately or for minor infections.

"3. When prolonged or intermittent administration is required, adequate blood studies should be carried out.

"4. In view of the paucity of information at the present time the conference hopes that further study of serious reactions to chloramphenicol and other drugs will be promoted. The records of the Veterans Administration and military forces could be of great value in providing some of the desired information."

* * *

Chloromycetin is one of five antibiotic drugs which are certified by the Food and Drug Administration. Testing procedures, packaging and labeling are spelled out in detail in official regulations, and every batch manufactured is double checked in the FDA laboratories in Washington.

Commissioner Crawford said the labeling of Chloromycetin will be changed to include the following warning:

(TO APPEAR AT TOP OF CIRCULAR)

"*Certain blood dyscrasias (aplastic anemia, thrombocytopenic purpura, granulocytopenia and pancytopenia) have been associated with the administration of Chloromycetin. It is essential that adequate blood studies be made when prolonged or intermittent administration of this drug is required. Chloromycetin should not be used indiscriminately or for minor infections.*"

(ON THE LABEL)

"WARNING: *Blood dyscrasias may be associated with intermittent or prolonged use. It is essential that adequate blood studies be made.*"

Dr. Kerlan, who is FDA's ranking medical officer, said that the recent experience with Chloromycetin "is an impressive reminder that highly potent drugs must be treated with extreme care and should not be employed unless there is a clear-cut indication that they are needed." He said there is no way of foreseeing as yet all possible reactions which may develop in patients after a drug becomes widely used.

THE PHYSICIAN'S *Bookshelf*

THE OCULOROTARY MUSCLES — Second Edition. Richard G. Scobee, B.A., M.D., F.A.C.S., Assistant Professor of Ophthalmology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, St. Louis, 1952. 512 pages, $11.00.

The first edition of this book appeared in 1947 and while there has been some controversy regarding some of the material it was very generally accepted and today is probably the most popular of all books on extraocular muscles and the one most widely used by residents in ophthalmology. The book was intended primarily for the student.

The second edition has been enlarged and certain changes have been made which improve the value of the book. Changes in terminology to conform with the generally accepted terms has removed some confusion that existed in the first edition. As stated in the preface, the author's discussion of the book with Dr. Walter Lancaster resulted in changing certain parts of the volume.

While the general format remains the same except for the color of the cover the number of pages has been increased from 359 to 512. The chapters dealing with physiology, retinal correspondence, the horopter, Sherrington's law, Listing's law, and some recent ideas on proprioception have been rewritten in more detail. Extension additions have been made in the chapters on hyperphoria and on exophoria. The addition of the section on intermittent exotropia to the chapter on exotropia has increased the value of that chapter a good deal. The section on heterotropia has been largely rewritten as has also the section dealing with the cover test. The final chapter on reasons for failure in tropia surgery is new and adds a good deal to the book. In addition to the above other portions of the book have been altered.

The addition of 47 new illustrations also enhances its teaching value. The index has also been enlarged.

One regrets that the references at the end of the chapters are not given in the usual detail.

This second edition is an even more outstanding contribution to ophthalmic literature than was the first edition.

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NORMAL BLOOD PRESSURE AND HYPERTENSION —New Definitions. Arthur M. Master, M.D., Cardiologist, Mount Sinai Hospital; Charles I. Garfield, M.D., Research Assistant in Cardiology, Mount Sinai Hospital; and Max B. Walters, M.D., F.R.C.P. (Can.), formerly Research Assistant in Cardiology, Mount Sinai Hospital. Lea and Febiger, Philadelphia, 1952. 144 pages, $4.00.

As indicated by the title of their monograph, the authors have attempted to define and to establish the normal range of blood pressure in the different age groups and in both sexes. The literature pertaining to the subject is reviewed adequately.

In utilizing the results of a statistical analysis of 74,000 unselected subjects, the authors propose new criteria for the normal range of blood pressure based on the age and the sex of the individual. The significance of these criteria in relation to coronary artery disease, myocardial infarction, and cardiac enlargement is discussed.

The outstanding features of this monograph are its excellent bibliography and the plea of the authors for the physician to disregard the height of the blood pressure reading and concentrate on the clinical findings. This book is recommended to all interested in cardiovascular disease and especially hypertension.

* * *

STUDIES IN VISUAL OPTICS. Joseph I. Pascal, B.S., M.A., O.D., M.D., Licentiate in Optometry and in Medicine by the University of the State of New York, Attending Ophthalmologist, New York Polyclinic Medical School and Hospital. Illustrated. The C. V. Mosby Company, St. Louis, 1952. 800 pages, $12.50.

The subject of visual optics is one of the most difficult ones for the student or resident in ophthalmology. The average book dealing with the subject is so full of formulas that the student is soon lost in a maze of mathematical figures. In his book Pascal presents these subjects in a simplified manner that permits the student to understand the underlying principles without delving into higher mathematics.

The book, which is divided into 46 chapters, covers the fields of optics; retinoscopy; refraction, including a discussion of prisms and spectacle lenses, some data on ocular muscles, together with a chapter on contact lenses. The appendix contains a lot of interesting information. The book contains a good index.

Much of the material for this book has appeared in various journals in the fields of ophthalmology and optometry. This has been augmented by a good deal of unpublished material.

The format while good does not come up to the usually good Mosby standard.

The book is especially recommended for the tyro in ophthalmology.

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A SEX GUIDE TO HAPPY MARRIAGE. Edward F. Griffith, Member of the Royal College of Surgeons, Licentiate of the Royal College of Physicians. With an Introduction by Robert Latou Dickinson, M.D. Emerson Books, Inc., 251 West 19th Street, New York 11, 1951. 352 pages. $3.00.

Although the reviewer cannot agree with all the author's personal viewpoints, he feels that this is a good book for the doctor to recommend to his patients. It can be particularly valuable for those individuals who are contemplating marriage or for those who have problems relating to sex. It may also be recommended to the physician himself because of its summarization in simplified form of a varied fund of useful knowledge, including sexual relations, contraceptives, and marriage counseling.

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The Challenge of the "Well Child"

ALVIS JOE SCULL, M.D., ***San Francisco***

In RECENT YEARS physicians have become aware of the need for preparation in the management of everyday problems of emotional growth and personality development. The increasing complexity of family life, emotionally and economically, places tremendous responsibility on the family physician, be he pediatrician or general practitioner, to recognize such problems and to advise as to appropriate and effective means of management.

It has been established by survey[1] that Well Child care represents an important demand placed upon the practitioners of medicine. Pediatric specialists are obligated to spend approximately one-half to two-thirds of their professional time giving Well Child care. General practitioners spend approximately 30 per cent of their time giving pediatric care, although for various reasons, only 5 to 10 per cent in Well Child supervision. Furthermore, the responsibility for the medical care of the children in a community resides, for the most part, with general practitioners, who are first to observe approximately 75 per cent of children for whom medical advice on a private basis is sought.

A recent postgraduate conference of general practitioners and pediatricians held at Stanford University School of Medicine emphasized this fact as an effort was made to evaluate and understand better the actual problems of physicians in practice. The interests were two-fold:

1. What are the behavior problems for which parents most frequently seek help?
2. How many and which of these problems can

• *Upon general practitioners and pediatricians falls the responsibility of recognizing and treating most emotional problems in young children. This may be best carried out by the anticipation of expected problems, and the advance guidance or counseling of parents. That such problems are of high incidence was indicated in experience at a pediatric clinic where approximately 40 per cent of 7,000 children observed had psychosomatic symptoms.*

In order to utilize effectively the limited time available in office practice for Well Child care, a physician must have at hand certain basic information on personality development. Many of the normal behavior patterns in children which frequently are misinterpreted as "behavior problems" by parents are presented herein in chart form, divided into critical age periods, to help physicians quickly recognize what is normal and what abnormal in various periods of maximal crisis. Most of the problems of conflict within a child and of conflict between parents and child, it is felt, could be and should be handled at the pediatric level. Some seriously disturbed children need to be referred for psychiatric care. When this is necessary, skillful preparation of the parent and the child by the family physician for referral is most important to successful psychotherapy.

From the Department of Pediatrics and the Child Guidance Clinic, Stanford University School of Medicine, San Francisco.

Presented before the Section on Pediatrics at the 81st Annual Meeting of the California Medical Association, Los Angeles, April 27-30, 1952.

and should be effectively handled by the family physician at the pediatric level?

After two weeks of intimate association between the postgraduate group and a group of discussion leaders chosen from the fields of pediatrics and child psychiatry, some strong impressions were formed as to how educators might better prepare physicians in training for their roles as counselors of parents.

The problems of the organically well child about which these physicians felt uncomfortable or inadequately prepared to give advice were scrutinized and the Pediatric Department of Stanford University, set up a comprehensive Well Child program in the Out-Patient Children's Clinic which is designed to meet the specific needs for orienting its medical students and residents to the demands that will be made upon them when they emerge into practice. The thought was expressed by many of the practicing physicians that more time devoted to the explanation of *how* a personality develops and what pitfalls can be expected at various age levels would be helpful. If each age level could be exposed and analyzed thoroughly, they felt it would help them understand *how a child thinks and feels* at a given age and thus *why he develops* disturbing behavior. It was felt that if one can better understand the child *thought patterns* and how they develop, then one can better understand the child and thus more effectively help him and his parents. Men so trained can be better prepared to comfortably and effectively advise mothers in the everyday problems of raising normal, healthy babies and to manage the psychosomatic aspects of their illnesses. Undergraduate medical education in the past has not adequately stressed this role which students will be called upon to play as practitioners of medicine.

It seemed, therefore, that a review of observations in the Stanford Children's Clinic might demonstrate the problems of dealing with the Well Child and serve as a guide for physicians in private practice. In a survey of the cases of 7,000 children observed in the Children's Clinic, it was noted that 40 per cent of the children who were observed as "new" patients had emotional problems to a degree that interfered with or prevented institution of somatic therapeutic measures that otherwise might be successful.

The cases of 755 children registered in the Out-Patient Clinic as "new" patients in a period of six months were reviewed. The children were observed and interviewed by students under the supervision of staff consultants. Patients were classified into four groups:

1. Well children with no complaint who came into the clinic for routine check-up and who, after a complete history and physical examination were done, seemed healthy, happy and well adjusted. (Obviously the percentage in this category would be expected to be much lower than in a comparable group in private practice.)

2. Children whose chief complaint proved to be entirely on an organic basis with no emotional conflicts apparent to the examiner or his consultants.

3. Children who came with a chief complaint referable to organic disease, but in whom there were psychosomatic overtones or emotional factors of sufficient magnitude to interfere with or prevent institution of definitive therapeutic measures.

4. Children whose chief complaint was of emotional or psychic origin without any organic factors of significance in either etiology or management.

The numbers of cases of each classification were as follows:

	No. of cases		Per cent	
1. Well without complaints	93		12.3	
2. Organic problems	346		45.8	
3. Psychosomatic problems	277	316	36.7	42
4. Emotional or behavior problems	39		5.2	

Of the 316 children who had problems relative to emotional inadequacies or who were psychosomatically disturbed, 39 who were considered to be too seriously disturbed for treatment on a pediatric level in the Children's Clinic were referred to the Child Guidance Clinic for consultation and psychotherapy. However, as 28 of the 39 were subsequently given treatment by two Pediatric Fellows in the Child Guidance Clinic, there were, in all, 288 children who were given some degree of psychological attention by the pediatric staff.

In light of the rather high incidence of emotional problems, obviously the matter is one for serious consideration by pediatricians and family physicians.

What are the reasons for hesitancy on the part of pediatricians or general practitioners to give counsel to parents when deviations from the normal behavior patterns begin to appear? (1) The feeling that there is not time available to them is a prominent factor in this attitude. (2) Lack of confidence in their own ability of judgment as to what can be constituted as "normal" undoubtedly plays a role. (3) Because of the tension and pressure under which physicians work in private practice, it may be that many cases of early deviations from normal developmental patterns are unrecognized in their incipient stages. Hence, only more seriously disturbed family situations are noticed by the physician, and these are understandably more complex than should be undertaken by him for treatment.

Against these factors, however, must be considered the many reasons why the general practitioner or the pediatrician is in a strategic and unique posi-

Chart 1

Normal Behavior Patterns of Children Which Appear as or Precipitate Problems for Parents

DEVELOPMENTAL AREAS	Age 1-3 Months	3-6 Months	6-9 Months	9-12 Months
Motor			Sitting, creeps.	Crawls, pulls up, walks alone.
Language				
Social	Smiles with stimulation.	Interested in attention from others; spontaneous smiles; recognizes desertion—cries if left. *Thumbsucking.*	*Shy—recognizes and fears strangers;* responds to familiar people; responds to play.	Anger— *Breath holding first appears.*
Feeding	Nursing— ? breast or bottle. Spitting up, colic.	Starting solid foods; may fight spoon. (Go easy.)	Holds bottle alone; usually big appetite. Often refuses solids, however (negativism).	Messy eater, finger-feeds self; long retention of food; refuses bottle often. *11-month abrupt decrease in appetite.*
Sleep	Irregular patterns.	Teething.	Rhythm movements; good to rock to sleep.	Sleep resistant (10 mo.).
Toilet Habits		Bowel irregularities.	Frequent efforts at toilet training.	
Sexual				Genital play if undiapered. (Self-discovery.)

tion to render effective service to any given family. (1) The family has great confidence in him as physician and advisor. (2) The family physician already knows a great deal about the total family situation and personal idiosyncrasies which could be weeks or months coming to light in a psychiatric setting. (3) There is, unfortunately, still a strong feeling among the lay public that a stigma is attached to placing oneself in the hands of a psychiatrist for advice or consultation. (4) Often, frequent short interviews with reassurance from the family physician can so fortify or reinforce parents that they are able to work successfully through rather difficult and trying situations. (5) Families will consult the family physician about little problems, whereas they will not go to a psychiatrist unless the child is seriously disturbed.

In helping parents to understand, avoid, or properly handle those periods of maximal crisis that normally appear during the course of the growth and personality development of their child, it is imperative that such periods be recognized and well understood by the counseling physician.

To understand more effectively the normal patterns of personality formation, it is well to recognize that every child faces a series of specific tasks or goals, each of which must be mastered or achieved before he is able to proceed to the next step in his development as a secure, happy and well adjusted person.[5, 8] Although many of the patterns are normal they entail behavior which will, in parents or other adults who do not appreciate that fact, precipitate conflicts in interpersonal relationships, which in turn result in or appear as behavior problems. It is at the time of such crises in behavior that informed physicians can often untangle the misunderstanding and relieve the tension in the home, in the child and the parent, thus eliminating problems which, if ignored or mishandled through efforts at discipline or punishment, will result in more serious personality problems and "problem children."

Briefly, the developmental tasks are as follows:

Developmental Tasks[8] *of Infancy* (Charts 1 and 2)

During the period of infancy, there occurs a very definite pattern of differentiation of the emotions in the child as well as a definite pattern of motor control. At around three months the infant's smile at his mother acquires social significance. By six months, the infant is quite clearly capable of experiencing also fear, anger, and disgust.[2, 3, 5] At about six months and again at around twelve months, he may show a fear of strangers,[2, 4, 6] or at least recognize and distinguish between familiar and strange persons.

By the end of the first year the child may show his affection for his parents and during the next five or six months may demonstrate definite evidence of affection or jealousy toward other children.[5]

Around two years, the child begins to feel extremely dependent upon his mother and a prolonged separation from her at this time creates a great deal of anxiety within him which may be highly traumatic.[2, 3, 4] During the second year, owing to frequent interferences with his physical activities and because of his own impatience with his lack of

Chart 2

Normal Behavior Patterns of Children Which Appear as or Precipitate Problems for Parents

DEVELOPMENTAL AREAS	Age 12-15 Months	15-18 Months	18-21 Months	21-24 Months
Motor				Runs well; goes up and down stairs alone.
Language				Uses pronouns: I, you, me. Stuttering common, not significant.
Social	Jealousy appears. Hyperactive—into everything. "Bites" frequently.	Sensitive—avoid shaming and punishment as yet; parents prone to expect too much conforming to adult standards.	Tendency to run around nude—shame too often used. Negativism; learning to control people; *temper tantrums appear.* Frequent waking, demands.	*Negativism increased;* accept without retaliation; temper tantrums persist. Shy of strangers, but adjusts quickly if not pressed. *Strong fear of desertion.* Good to sing or rock to sleep. Sitter troubles—avoid trips away unless baby along.
Feeding	Grabs at dishes, cups; messy eater.	Wants to feed self, spills; must eat when hungry, can't wait at all. Changes food likes, dislikes. *Peak of thumbsucking (as tension outlets?).*	Good appetites; if easily distracted—feed before others. Strong food preferences.	Finicky about foods: color, taste, or consistency.
Sleep	Wakeful at nights—1-2 hours often.		Frequent waking at nights, not fear. Numerous demands. Pleasure of using words.	
Toilet Habits	If regular—try training; starting sphincter control; fear of toilet noises. Plays with feces if undiapered or loosens diapers. Urge use of potty chair.	May resist if just starting toilet training.	Smearing of stools, especially after naps. Girls beginning to stay dry—not boys. Boys often demand to be fully undressed before will try bowel movement.	Strong fear of bed-wetting; never punish—reassure. Usually toilet trained by by now.
Sexual				
School				Only if unavoidable; need good introduction with mother along. Short attendance periods—avoid overstimulation; don't expect participating play.

ability, angry outbursts are likely to be frequent. Throughout infancy emotional reactions occur, characteristically brief and transitory, although they may be intense.

The parents should be prepared for temper tantrums, which occur most frequently at this age. There is also an exaggerated fear of separation from the parents. This is normal, for the child is very dependent upon them. Parents should avoid trips of separation that are optional. Any unknown is frightening, too. Careful preparation of the child for any expected family addition is of great importance at this age to minimize jealousy. The first step in the emotional development of the infant is to acquire a sense of security and trust which comes from the successful establishment of complete dependence upon his parents and their acceptance of him. The child who can trust his parents is not afraid to grow up.[4] The child still has fear of strangers at this age, but enjoys social groups of the family, a demonstration of his power of discrimination. This a physician may point out as a compliment to the family; it is the child's recognition of his dependency upon the parents.

The next step in the emotional growth of the infant is to become aware of himself and to develop a concept and feeling about himself as an individual who is distinct from his environment.[5, 8] With experience, by trial and many errors he gradually begins to adjust to the world around him, acquiring more and more control over his own movements and over his environment as his physical abilities develop. He also begins to adjust to his social world so that before the end of his first year he is beginning to respond to the expectations and demands of others. It is during his second year that he begins to acquire feelings of what (in his behavior) will be tolerated and what is appropriate. This awareness of right and wrong is the beginning of the development of the child's conscience.[5] Parental disapproval or punishment engender a feeling of guilt and shame, while parental support and encouragement lay the foundation for self-confidence and independence.

Most of the social demands made upon an infant during his first year revolve around eating. Even at this early age there may develop conflicts about food —conflicts about, for instance, what or when a child should eat—that may result in anxiety and resentment on the part of both the mother and the child.

Self-feeding by spoon may be allowed, but the mother should be advised not to become annoyed or too greatly concerned about the splashing and playing with food. An insecure child may over-eat in an effort to please his mother or reassure himself that he is loved, while a child in conflict with his mother succeeds in punishing her by his refusal to eat. Because conflicts involving eating serve no useful purpose and often provide the groundwork for emotional disturbances in later life, a physician is carrying out a most important function when he helps parents to guide a child to a more mature and satisfying method of eating with a minimum of friction.

Probably the next source of harmful conflict with an infant is in connection with toilet training or bowel control—especially since toilet training is usually started at about the time when an infant is just becoming aggressive and can experiment with motor control and is beginning to exercise his need to become physically independent of his parents. To undertake bowel training before the child has acquired cortical control over the sphincters (which as a rule occurs in the latter part of the second year[5]) only makes him feel uncomfortable and too often results in a feeling of frustration in the parents.

A physician giving counsel regarding toilet training cannot rely upon the mother's ingenuity but must give logical directions and explanations as to when and why this procedure is advantageous. It is most natural for toilet training to be accomplished at the imitative ages of 18 to 20 months, but blaming and shaming must be avoided.

If too much emphasis is placed on cleanliness, a child may continue to be preoccupied with thoughts about sphincter control long after he should have gone on to other problems of growing up. If a child learns to associate toilet training and elimination functions with disgusting or unpleasant emotions, he may transfer these feelings to his sexual activities. This could eventually handicap him in making a satisfactory sexual adjustment in adult life.

The end of the second year is a critical time for parents. It is only natural to begin to expect "too much" of a child at this age, and to become concerned and confused as to discipline, obedience and authority. It is most important to recognize that the child needs (1) the joy of achievement and (2) the approval of his successes to enable him to go on to the developmental tasks of his next stage.[5, 8] Parents need acceptance, understanding and support by their physicians, too.

During his second year a child often discovers that he has a mind of his own; he wants to think for himself, to make his own decisions, and he begins to resist the domination of others. He begins to say "I will" or "I won't" and the degree of the negativism in this newly forming personality often varies directly in proportion to the amount of negativistic approach on the part of the parents in their control over their child.

Here, the mother might be advised to remove valuable, breakable objects from the room, as the baby is beginning to walk around. "No, no" must be avoided as much as possible. This is the beginning of the imitative age and a dangerous time when negativism can be encouraged by a negative attitude by the mother. Negativism when associated with the newly developed desire to explore the physical environment often results in trouble for unprepared parents. If a physician counselling parents can anticipate this period and prepare them so that they will not be surprised or have their feelings hurt when it occurs; if he explains to them that the exasperating behavior patterns of the 2- or 3-year-old are not signs of badness or of a problem child but that the child is developing his independence and his mental abilities; if he can help the parents to understand that it is desirable to encourage the child's trend toward independence and self-reliance, although at the same time directing and channelling the child's behavior for his own safety, the child's daily life and the distressed concern of the parents can be made less unsettling. Patience, consistency of management, firmness without domination, and a good sense of humor are keys to emotional approaches which can help parents to cope successfully with this phase of the child's development. Sound advice to parents is: Avoid punishment if possible; it isn't effective. Don't try to be perfect nor have your child perfect. Relax and be natural. Remember, if mother and father are happy, this will be reflected in the child's reactions.

Early Childhood (Charts 3 and 4)

It is in the period between 2 to 3 years and 5 to 7 years, when the child remains emotionally dependent upon his parents for his security and many of his social satisfactions, that his physical independence becomes fully manifest. Any extreme feeling of insecurity in relationship to his parents during

CHART 3

Normal Behavior Patterns of Children Which Appear as or Precipitate Problems for Parents

DEVELOPMENTAL AREAS	Age 2½ (30 Months)	3rd Year	4th Year	5th Year
MOTOR		Can now dress alone with easy garments; *not self-sufficient.*	Dress and undress self; not tie shoes yet.	Ties shoes alone; definite handedness; fastens buttons.
LANGUAGE	Constant talking.	Stuttering again. (Go easy.)	Lots of silly language.	
SOCIAL	Definite preference for mother or father. *Avoid moving homes if can;* don't rearrange furniture; prefers environment static. Everything has its place (go along with it).	Peak of imaginative life. Can tolerate mother's being away—understands she will always return, if so assured. (Day nursery if mother works.)	Temper tantrums and negativism subsiding. Boasts and shows off. Tendency to visit about neighborhood but is not running away. (Good) Let 'em go.	Poised. *Strong sense of pride in possession.* Dogmatic re: own ideas. Self-assertion—even if different from parents. Lies—if frequently, probably "pressured." If angry—stubborn, resistant; whines and pouts—but easily placated with fairness and tact.
FEEDING	Beginning to snack between meals. Excessive candy demands.	*Prone to wander around at meals.* Eats better alone—dawdles.	Few problems. May talk so much interferes with eating (be tolerant).	Wiggles lots. Tends to monopolize conversation. Nail biting, nose picking are tension outlets.
SLEEP	*Rigid ritual of bed-time; resists naps*—climbs out of bed. Keep bedroom window secured.	A.M. waking problem; wants to get into parents' bed. Likely very upset if wakens and parents not quickly at hand.	Dreams evident (animals ok). Good time to change to junior bed.	Frightening dreams. Select bedtime reading and shows carefully.
TOILET HABITS	Boys usually dry now also.		If still having accidents, wonder why!	Cares for self at toilet.
SEXUAL	Confusion and concern over own sex. Need reassurance and chance to discuss their perception of sex differences.	Frequent use of bathroom language. Sex questions begin—satisfy; don't evade. Interest in each other's bodies (not naughty).		Very interested in babies, (pets), where they come from (don't evade). Awareness and interest in sexual characteristics in others. Modest about self-exposure. Both boys and girls express desire to "have babies" themselves.
SCHOOL		3½ good time to start school. Accepts suggestion readily.		Hates "have to rest" naps; otherwise enjoys routine. Adjusts well to school or kindergarten.

this phase of his development will produce in the child much attention-getting behavior, such as clinging dependence, whining, temper tantrums, refusal to obey—that is, persistence of many patterns of infantile behavior.

Now the child becomes increasingly able to take directions and to conform to social demands. He learns more and more about the rules of authority and the rules of social living. If he loves and respects his parents, the child makes an effort, insofar as he is able, to be like them and to behave as they do.

In addition to learning the elements of family living by his relationship with his parents, the child now begins to develop the capacities necessary for learning to get along with other children. If there are brothers and sisters, he has the opportunity to develop his social feelings with them; if not, he depends upon playmates for this part of his social development. Parents should expect a certain amount of friction between children in early childhood, for at that age they are all self-centered or parent-centered. When a parent-child relationship is satisfactory to them and they feel secure, children are usually able to tolerate and get along with their playmates acceptably. There will be, however, friction, some sibling rivalry and jealousy in any family, and it is the constructive handling and resolving of these frictions and rivalries that lets the child gradually learn about the rights of others and how to share.

Although early childhood is a time when fantasy is very active, children of that age are, at the same time, learning more and more about the realities of the world, although they may yet refuse to accept uncritically the superficial adult answers in regard

CHART 4

Normal Behavior Patterns of Children Which Appear as or Precipitate Problems for Parents

The 6th Year—An Age of Tension—Lots of Tension—Time of Many Problems

MOTOR	Constantly in motion, but tires easily. Headstrong; clumsy—prone to falls.	SEXUAL	Very interested in marriage and sexual roles; but as to responsibilities, not intercourse. Interested in babies; *reenact baby roles,* i.e., wetting, crawling, putting on diapers, cuddling . . . *Exhibitionistic drives* (don't shame): Boys—show and compare genitalia. Girls—more apt to pull panties off younger children. Frequently play doctor: taking temperature (rectal or vaginal) (after 4-5 good to use oral thermometer in hospital, office).
LANGUAGE	Giggly—*frequent use of bathroom terms in calling "names."*		
PARENT-CHILD RELATION.	Beginning to achieve feeling of independence (good). Is at worst and best behavior with mother (ambivalence). Difficult to punish; "take out" on mother (threatens to get another). Begins to realize parents not omnipotent.		
SOCIAL	Scuffling, wrestling and roughhousing. Easily distracted in dressing—dawdles. Is center of universe; must be first; must win, "poor loser"—*will cheat to win.* Lacks self-confidence; apprehensive; needs reassurance and uncritical or patient relationship with parent and teacher. Very sensitive, highly emotional. Marked increase in auditory and spatial phobias: (altiphobia, claustrophobia, firewagons, fireworks, etc.).	SCHOOL	Like school—yet apprehensive and unsure of self; frequently ill till too late to go and quickly recovered. (100% attendance not important.) Embarrassed to ask teacher to go to rest rooms; unable to go to toilet frequently, and fear of accidents leads to fear of going to school. Many children control selves nicely in school then release controls and "hard to handle" when home (again—help parents understand this as needed outlet if they are to conform at school.) High incidence of nail-biting, thumb-sucking, chewing on objects as school starts. School discipline often conflicts with permissiveness at home—"hard to take"—child must suppress tension. Marked interest in making and being friends; difficult to maintain as each wants own way in association. (Reassure.) Very "tattle-taley."
TOILET HABITS	Probably *occasional "accidents" again,* bowel and bladder—usually afternoons (mostly tension outlet).		
FEEDING	Overeats, stuffs self; *loses all manners.* Is clumsy—grabs, knocks food over and spills; kicks table, tips chair back, etc. Prone to likes and dislikes, but rational about it.		
SLEEP			

to the world around them. There are times when they still prefer their own fantasy as an explanation of questions which arise in their minds.

It is during this period, usually, that a child begins to have feelings and questions regarding sexual matters. He becomes aware of his own sexualities. He probably has discovered the anatomical differences between the sexes, and is now faced with the necessity of accepting his own sexual role in life. This is likely to be marked with great confusion and emotional turmoil in his relationships to his parents and their sexual roles. A little girl, while able to maintain a close identification with her mother, needs also to develop a feeling of satisfaction and confidence in her relationship with her father. This allows her to develop an emotional basis which will eventually help her find satisfaction in her relationship with a member of the opposite sex. On the other hand, a little boy whose chief love object has always been his mother must now begin to identify himself with his father and to think of himself as a man. This may result in a desire to cling to his mother and may precipitate feelings of jealousy and hostility toward his father. Parents often need emotional support as well as the advice of physicians if they are to deal constructively and objectively with sexual feelings and behavior of their children. Being objective about sexual matters is extremely difficult for most parents. As they find themselves confronted with the curiosity and behavior of their children, they often are highly embarrassed, if not anxious, ashamed, or disgusted, owing to their own insecurity in this area. An adult is often inclined to think of a child's sexual interest only from the moral standpoint of the adult, forgetting that in reality it is merely a healthy part of growing up. When children are punished for sexual interest or behavior, or if parents are evasive or give impressions that sexual information is something unpleasing or undesirable, they not only increase the child's need for experimentation, but they also may leave feelings of anxiety, guilt, and hostility in direct association with sexual thoughts. All too often this results in great difficulty in attaining normal heterosexual or marital adjustment later. If the parents can answer a child's questions promptly and honestly, no matter how early they are expressed, and as simply as possible so that his mental and emotional needs are satisfied, then the child, his curiosities satisfied, can more easily move on to other aspects of learning.[2, 4, 5, 6]

The Developmental Tasks of Late Childhood

Late childhood is the age period when a child not only continues to grow up, but also begins to grow out, for it is during this time that the child's interests and activities begin to be centered about the school and the playground. He begins to grow out of the home into community living, and his chief psychological goals now are concerned with school adjustment both academic and social.[8] The child has lost some of his strong emotional dependence upon adults and has become interested in children of his own age. He is looking upon himself as an individual and takes a rather realistic view of his parents, no longer regarding them as omnipotent and infallible. He often demands the right to have his own opinions and to make some of his own decisions; the time of blind obedience to authority is gone. This may be true at school as well as at home. However, as his emotional dependence upon adults has become less imperative, the dependence upon the approval of peers has become stronger. His chief interest in life is now to be one of the group of his own age and of his own sex.

If a child has received enough love and feels secure at home during the infancy and early childhood phases of his development, if he has known the approval of his teachers and has been liked during his first experiences in school, he is now ready and able to give both love and affection to friends in his play groups, and also to his parents, even to brothers and sisters at times. Truly this ability to give affection as well as the need to receive it is a big step toward maturation and emotional development of the child. It is when he has not received such love in the past that he may be handicapped in developing a mutually satisfactory relationship with his peer group and with adults.

It is often in late childhood that the pressures from the parents to "do well" or "to do better than" cause conflict and trouble. It is wise to caution parents to be sure they are not expecting more of the child than his ability can deliver.

In group activities, children learn more about the rights and rules of social living. As the child develops the ability to read and write, the use of language to exchange ideas and to influence other people comes into its own. He becomes increasingly interested in the why and wherefore of things as he faces problems and begins to develop physical skills.[8] He can now accept chosen or delegated tasks, and if he is helped to accomplish these, thus winning approval for his achievements, he acquires the habits of industry, a feeling of self-confidence and adequacy upon which can be built a successful and productive life.

As school attendance is the first big step into community living, it seems obvious that well child conferences should not be discontinued until the child has satisfactorily and happily made this transition from the home into community living.

Adolescence

The problems of adolescence are of great complexity. The importance and responsibility of pediatricians to the adolescent is great because of the varying rates of maturation in different children. No specific limits can be set, but rather (again emphasizing the individuality of the child) one must be thoroughly aware of the developmental patterns of childhood in order to determine when a child has achieved and passed through adolescence, and thus accomplished all the developmental tasks of childhood.[8]

THE PHYSICIAN'S ROLE IN EMOTIONAL PROBLEMS

The question arises, what kinds of psychosomatic or emotional problems can a physician in general practice or a pediatrician be expected to deal with effectively? Obviously this will vary somewhat with the individual practitioners and their own feelings, but it seems logical that most of the problems appearing in the first six years of life can be dealt with by them. This is a habit training period, and the points of conflict are actually normal developmental patterns of behavior, although often misinterpreted as "problems" by parents and physician. It is conflicts of this order that can so easily be avoided if foreseen or "nipped in the bud" by preparing the mother for them in advance, and by reassuring over-concerned mothers or fathers that such and such is to be expected at this age; for the child, it is normal behavior.[7] A physician's task may be mainly to help parents accept their child as he is.

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Advances in Pediatric Surgery

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• *Recent advances in pediatric surgery have been made in several fields. Hydrocephalus is again being treated by draining the cerebrospinal fluid into either the ureter, the mastoid antrum or the peritoneal cavity. Funnel chest should be corrected surgically. Congenital atresia of the esophagus is best treated by a one-stage operative repair. Patent ductus should be closed. Operations are available for cyanotic children. Intussusception is again being treated by barium enema in selected cases. Megacolon can be benefited by surgical procedures, which now are directed at the distal spastic segment rather than the proximal dilated segment.*

Many of the advances in the field of pediatric surgery stem indirectly from increased knowledge and ability to cope with the fundamental problems of hemorrhage, shock, electrolyte losses, infection, and anesthesia. The theoretical concepts, which are common to medical as well as surgical pediatric problems, are rather difficult to implement in children, particularly in newborn infants, and certain practical advances have been made in recent years which are worthy of emphasis. These practical considerations pertain to the administration of anesthesia and parenteral solutions.

Endotracheal anesthesia in infants was occasionally followed by obstruction to the airway from edema and irritation. This may still occur, but is becoming rare now that small endotracheal catheters of inert plastic material have been developed for endotracheal intubation of infants. Similarly, the control of the flow of respiratory gases through endotracheal tubes has been facilitated by the use of non-resistance valves (Slater valves). The value of bronchoscopy and its use in aspiration of the tracheobronchial tree for the prevention and treatment of atelectasis has become available for newborn infants with the development of a bronchoscope and laryngoscope (Michelson[10]) especially for infants.

The best treatment of shock is prevention, and the simplest manner of preventing fluid, blood, and electrolyte loss during major surgical procedures in infants is to insert a small polyethylene catheter into the internal saphenous vein. This is an extremely valuable procedure which can be done very simply under local anesthesia. It may be done while the child is being prepared for operation or during anesthetization immediately before operation. A transverse incision 1 cm. in length is made in the skin just anterior to the internal malleolus. The subcutaneous fat is separated bluntly in the direction of the internal saphenous vein until the vein is identified. The vein is ligatured distally, an incision made into it, a plastic catheter or a blunt-needle cannula inserted, and passed upward into the saphenous vein for a few inches. The cannula is tied in place, and a single suture closes the skin wound. It should be remembered that as it is difficult or impossible to draw blood back freely in newborn infants, the best way to make sure the indwelling catheter is functioning is to drip fluid into the vein. The catheter may be used for continuous drip infusion in the postoperative period for several days. This simple and satisfactory method of parenteral intubation is a significant advance in pediatric surgery and may prove life-saving.

NEUROSURGICAL ADVANCES

The surgical treatment of hydrocephalus has occupied the interest and attention of pediatricians and surgeons alike. Hydrocephalus may be related to a block in the free circulation of the cerebrospinal fluid, either on a congenital, traumatic, or postinflammatory basis; or it may result from failure of absorption of the cerebrospinal fluid. Diagnostically, dye studies and air studies to determine the type of hydrocephalus are particularly important, for upon the diagnosis depends the kind of surgical procedure to be employed.

Torkildsen's Procedure.[15] The Torkildsen procedure consists in inserting a rubber catheter or polyethylene tubing into the posterior horn of one of the lateral ventricles, passing the tubing beneath the bone but outside the dura, and implanting the other end into the posterior cistern. It is also possible to pass the shunting tube subcutaneously. This shunt relieves an obstruction to the intracranial flow of cerebrospinal fluid, and is applicable to tumors of the pineal gland, third ventricle, aqueduct, or fourth

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ventricle. It also by-passes a congenital stenosis of the aqueduct of Sylvius. It requires a normal posterior cistern and a normal absorption of cerebrospinal fluid once it has gained access to the posterior cistern. It is not applicable, therefore, to the obstructive hydrocephalus often associated with spina bifida, which is generally owing to an accompanying Arnold-Chiari malformation.

Matson Procedures.[8] In 1951 Matson reported the successful use of two procedures in hydrocephalus, the choice between them depending upon the presence or absence of a block to the free flow of cerebrospinal fluid:

1. *Anastomosis between the lumbar subarachnoid space and the ureter.* If no obstruction exists to the flow of cerebrospinal fluid, as in the communicating or idiopathic hydrocephalus, a shunt can be established between the lumbar subarachnoid space and the ureter. This consists in sacrificing one kidney, using a small polyethylene tube to bridge the gap, and connecting the lumbar subarachnoid space to the ureter.

2. *Ventriculo-ureterostomy.* In patients who have an obliteration of the spinal as well as the intracranial surface subarachnoid spaces the previously described shunting procedures would be useless. Matson,[9] therefore, has elected to shunt the cerebrospinal fluid directly from the ventricle into a ureter by means of a long subcutaneously-implanted polyethylene tube. The procedure seems indicated in hydrocephalus of the following types:

(1) Obliteration of the absorptive surfaces for the cerebrospinal fluid, as an aftermath of purulent meningitis or diffuse hemorhage into the subarachnoid space. Many more patients survive purulent meningitis nowadays with antibiotic therapy, and obliteration of the posterior cisterns and subarachnoid absorptive pathways is more frequently encountered.

(2) In benign obstructions of the aqueduct of Sylvius or posterior fossa, either on a congenital basis or from Arnold-Chiari malformation. The subarachnoid pathways may also be obliterated or may not have developed. In such circumstances, ventriculo-ureterostomy offers relief from progressive hydrocephalus.

In young children the obvious problem with this procedure is that of subsequent growth. The consequences of this difficulty will have to be evaluated in the future.

It should also be emphasized that in the immediate postoperative period problems in fluid and electrolyte imbalance are likely to be troublesome. Attention must be given to chloride, sodium, water and potassium balance.

Nosik Procedure[11] (ventriculomastoidostomy). The indications for this procedure are similar to those for ventriculo-ureterostomy. It has the advantage of avoiding fluid and electrolyte loss from the body, for the fluid passes from the ventricle into the mastoid antrum, then into the middle ear and the eustachian tube, and finally is swallowed from the nasopharynx. It also creates a pathway between the ventricle and nasopharynx, a possible route for retrograde infection. In practice, however, the differential pressures and the action of the cilia in the eustachian tube seem to minimize the hazard of retrograde infection.

Briefly, the procedure consists in shunting the cerebrospinal fluid from the lateral ventricle into the mastoid antrum by a small polyethylene tube.

None of the various shunting operations for hydrocephalus is applicable or justified once irreparable brain damage has already occurred. They are not a means of prolonging a demented life.

THORACIC OPERATIONS

Advances in both techniques and concept of thoracic surgery have been made in recent years. Technical advances have permitted the surgical repair of such conditions as funnel chest, atresia and stricture of the esophagus, patent ductus arteriosus, coarctation of the aorta, ringed aorta, and anomalous subclavian vessels. Conceptual advances have resulted in the use of operations to alter the flow of blood through the lungs; and cyanotic heart disease, pulmonary stenosis, and transposition of the great vessels have become amenable to surgical benefit.

Funnel Chest. The cause of funnel chest is still not clear, but it is related to a short central tendon of the diaphragm in infancy and in later years to a progressive deformity in the growth of the sternum and attached costal cartilages. Surgical correction is advisable in order to correct the deformity, which becomes of psychological concern to a growing child, to prevent progressive increase of the deformity with attendant kyphosis and rotation of the sternum and costal structures, and to relieve cardiac and pulmonary embarrassment which may occur in later years from compression of the heart or lungs.

It is not possible to predict the rate of progression of the deformity. In general, the earlier surgical correction is initiated the simpler the surgical procedure required. In cases of long standing, with severe deformity in adolescence, extensive operation may be only partially corrective.

In young infants and in children under two years of age the most commonly used surgical procedure is to section the attachment of the central tendon of the diaphragm to the xiphisternum after excision of the xiphoid process. The subcostal ligament is also incised and the sternum elevated. The release of the abnormal pull of the diaphragm on the sternum permits elevation of the sternum and prevents or retards subsequent progression of the deformity with the attendant costal arch deformity. In older children, or in adolescents, it is generally necessary to excise all the deformed costal cartilages and ribs anteriorly from the second to the seventh inclusive, mobilize the sternum from the anterior mediastinal structures, osteotomize the sternum at the sternomanubrial junction, and then maintain the sternum in an elevated position until healing has occurred either by suturing the sternum to the manubrium in the corrected position or by using a long rib strut beneath the sternum to maintain proper elevation.

Congenital Atresia of the Esophagus. The commonest type of congenital atresia of the esophagus, which results from a failure of proper embryonic separation of the esophagus from the tracheobronchial tree, is as follows: The upper end of the esophagus terminates as a dilated blind sac about the level of the first to second thoracic vertebrae, and the lower end of the esophagus, which is thin and undeveloped, communicates with the trachea through a tracheo-esophageal fistula. In former years it was possible to reconstruct the defects by employing staged operations and eventually obtain continuity of the upper alimentary tract by an antethoracic cervical esophagogastrostomy. This entailed months of hospitalization, often with a distressing result from the parental viewpoint, even if the child survived. The brilliant advances in thoracic surgery in infants in recent years now permit a one-stage reconstruction of this disorder by direct repair of the tracheo-esophageal fistula and a simultaneous end-to-end anastomosis of the esophageal segments. A normal anatomical and physiological alimentary tract is established. The mortality rate from the procedure is less than 50 per cent, taking statistics the country over. The sooner operation is performed, the less likelihood of attendant, oftentimes fatal, complications from pulmonary infection, dehydration, and malnutrition. It is imperative, therefore, that the condition be recognized early. Inability to swallow, respiratory distress and cyanosis on feeding, and the spilling over of food or saliva into the tracheobronchial tree are symptoms. The diagnosis may be readily confirmed by inability to pass a catheter down the esophagus and by roentgen studies made with Lipiodol® to outline the upper blind sac of the esophagus. The presence of air in the intestinal tract establishes the presence of a tracheo-esophageal fistula in association with the upper blind esophageal sac.

The author's preference is for right transthoracic extrapleural repair with resection of a segment of the fourth rib. In this procedure the lower end of the esophagus is disconnected from the trachea, the tracheal fistula repaired, and a primary end-to-end anastomosis of the esophageal segments is done. Gastrostomy is established for feeding until adequate food can be taken orally.

Stricture of the Esophagus. Congenital complete atresias of the esophagus can be repaired by antethoracic cervical esophagogastrostomy. When the patient is older it is possible to drop the antethoracic stomach back into the thoracic cavity to improve the cosmetic result. Localized congenital strictures or diaphragms of the esophagus can be repaired by transthoracic resection of the esophagus with primary end-to-end anastomosis of the esophagus. Extensive strictures can be corrected by resection of the strictured area and intrathoracic esophagogastrostomy, a procedure that entails sacrifice of the cardiac sphincter and may be followed by peptic esophagitis.

The commonest strictures of the esophagus, however, result from trauma—usually from swallowing of a caustic material such as lye. In recent years the armamentarium for management of such lesions has been enhanced by the development of the Tucker[16] indwelling dilators and the Hurst mercury bougies. Once satisfactory dilation of the stricture has been obtained, the patient or the parents can be taught the use of the Hurst mercury dilators to maintain the esophageal lumen.

Patent Ductus Arteriosus. Patent ductus arteriosus was the first congenital lesion of the great vessels to be treated successfully, and universal experience since 1938 has attested the success and safety of the operation first performed by Gross.[4] A child in whom the condition exists may appear to be normal, or he may be underdeveloped. A palpable thrill over the precordium and a continuous, harsh "machinery" murmur of an arteriovenous fistula, heard best over the second and third interspaces to the left of the sternum, are characteristic. There is greater than normal disparity between systolic and diastolic blood pressure, with the diastolic pressure low. As much as 70 per cent of the blood may be shunted through the ductus back into the lungs, and in x-ray studies an enlargement of the pulmonary conus and increased vascular markings in the lung fields may be noted.

If a ductus does not close by the age of two years operation should be advised, for the period in which operation can be most easily and safely accomplished is between two and six years of age. The surgical procedure consists in division of the ductus, if this can be performed safely; or, if the ductus is so short and broad that division seems unsafe, multiple suture ligatures may be used with only a rare recurrence.

Coarctation of the Aorta. The diagnosis of coarctation of the aorta is ordinarily not difficult, if the condition is suspected. Nosebleeds, headaches, cold legs, pains in the extremities, and easy fatigability on running should arouse suspicion of this lesion. Hypertension in the upper extremities with femoral pulsations and pressure diminished or impalpable affords a clinical diagnosis, which can be verified by roentgenographic observation of notching of the ribs and left ventricular hypertrophy. There are two common types: (1) the adult type, in which the constriction is short, and in which resection of the coarcted area with end-to-end anastomosis of the vessel is feasible; and (2) the infantile type, in which the coarcted segment is long and irregular, oftentimes with a patent ductus arteriosus entering below the coarctation, and in which direct repair of the aorta is not possible.

Crafoord[3] and Gross[5] described the successful repair of coarctation of the aorta in patients by direct end-to-end anastomosis. The pertinent remaining questions as to growth of anastomosed vessels after circumferential suturing and as to the technique of bridging aortic defects have been partially answered in recent years. It has been observed that the size of an anastomosed area increases somewhat with the size of the patient, particularly if the suture line is interrupted in several places in its circumference. Aortic defects have been bridged by direct substitution of specially preserved aortic homografts (Gross[6]), and other investigators have circumvented the problem by swinging the left subclavian vessel down to bridge the gap and carrying out anastomosis between it and the aorta.

As there is little likelihood that coarctation will cause serious damage before the age of six years, the optimum age for operation seems to be between six and fifteen years. As three-fourths of patients with coarctation of the aorta die in early adult life, operation before age fifteen is advisable.

Anomalous Subclavian Artery and Ringed Aorta. Anomalies of the arch of the aorta are not uncommon, but not all of them cause symptoms. Symptoms, if they occur, are related to respiratory or esophageal obstruction. Difficulties in swallowing or repeated bouts of dyspnea, respiratory distress, or coughing should arouse suspicion of these lesions, particularly if other congenital anomalies exist. The diagnosis is confirmed by x-ray visualization of compression of the esophagus. The two commonest anomalies of the arch are ringed aorta and aberrant right subclavian artery. In repair of ringed aorta the smaller aortic arch is divided and the ends sutured. Anomalous right subclavian artery is corrected by dividing the artery just distal to its origin from the descending aorta and permitting it to retract to the right of the trachea and esophagus.

Cyanotic Heart Disease. Congenital heart disease is commonly divided into the cyanotic and acyanotic groups. Any condition which permits shunting of blood from the right side of the heart to the left, or which prevents an adequate flow of blood through the lungs will result in incomplete saturation of the arterial blood. Cyanosis results, or rather is "visible," when the amount of oxygen-deprived hemoglobin in blood circulating in the "visible" capillary beds (lips, fingernails) is 5 gm. or more per 100 cc. In children, cyanosis from failure of blood to be oxygenated as it passes through the pulmonary bed is rare, and the common cause of cyanosis is from venous admixture. The common cyanotic lesions which have become amenable to surgical benefit are:

1. *Tetralogy of Fallot:* The four characteristics of this anomaly are pulmonary stenosis, interventricular septal defect, dextroposition of the aorta which overrides the septal defect, and hypertrophy of the right ventricle.

A patient with this condition is cyanotic, and in x-ray films of the chest diminished pulmonary artery markings and right ventricular enlargement may be observed. The general principle of surgical treatment is to increase the amount of blood flowing through the pulmonary circuit. In infants, creation of this life-saving artificial ductus is best accomplished by direct anastomosis of the aorta to the pulmonary artery, the Poth-Smith operation.[12] In children over two years of age the Blalock-Taussig operation[1] is preferable, namely, anastomosis of the subclavian artery to the pulmonary artery. The optimal age for the operation seems to be between the ages of five and ten, but it may have to be done earlier if life and development are unduly threatened at an earlier age. "The sicker the sooner" is the accepted motto.

Some day it may be possible to deal with the problem more directly by surgical enlargement of the stenosed portion of the pulmonary artery, but this must await further refinements in angiocardiography to permit better visualization of the existing anomalies and a greater experience with the technique of Brock[2] for direct valvulotomy. It is probable, however, that the direct method would not be applicable if the stenosed portion was long, but if it was short and diaphragm-like and the pulmonary artery beyond it was enlarged, direct operation probably would increase the flow of pulmonary blood without adding another cardiovascular anomaly.

2. *Stenosis of the pulmonary valve.* This condition is statistically one-tenth as common as the tetralogy of Fallot. It is accompanied by cyanosis in 70 per cent of cases because of accompanying interauricular septal defect or interventricular septal defect with a right-to-left shunt. Dilation of the pulmo-

nary artery beyond the point of stenosis, which is characteristic, may be observed on a plain film of the chest or angiocardiographically. Right ventricular pressure is very high, and the right ventricular hypertrophy observed at operation is striking. If the pulmonary artery is palpated at a point immediately beyond the site of stenosis, the spurting of the jet-like stream of blood through the stricture can be felt. Creation of an artificial ductus in this situation may initiate right-sided heart failure. The operation of choice is the Brock procedure,[2] in which the pulmonary valve is cut and dilated through the use of special valvulotomes and dilators passed through a small incision in the right ventricle.

Other Less Common Anomalies. Surgical possibilities are being explored in the management of complete transposition of the aorta and pulmonary vessels and in the treatment of tricuspid atresia. Results in these conditions are still quite unsatisfactory. Similarly, the closure of interauricular and interventricular septal defects awaits the development of suitable pump-oxygenators which will sustain both cardiac and pulmonary functions while intracardiac operation is being carried out.

ABDOMINAL OPERATIONS

Intussusception. In recent years there has been a renewal of interest in nonoperative management of intussusception. The majority of cases of intussusception occur in infants under two years of age, and rarely is a local lesion such as a polyp, tumor, Meckel's diverticulum, or ectopic pancreatic nodule encountered. Intussusception generally begins at the ileocecal valve, and as the intussuscepted bowel drags more of the enveloping loop in after it, the head of the intussuscipiens remains constant. The most characteristic symptom is discharge of blood into the bowel owing to the vascular embarrassment of the intussusceptum. Edema and compression narrow the lumen of the bowel, causing first partial and later complete obstruction. Gangrene of the bowel occurs after a variable period of time, depending upon the degree and completeness of vascular occlusion. Oftentimes a sausage-shaped mass is palpable in the left upper quadrant of the abdomen and there is absence of bowel in the right lower quadrant. Colic and vomiting, blood in the stool or discharge of bloody material, partial obstruction, and an abdominal mass occur early; later, ileus, peritoneal irritation, and manifestations of toxicity appear. The diagnosis is confirmed by roentgen examination after barium enema.

In clinical and experimental observation[13] it has been noted that barium introduced under hydrostatic pressure of three to three and one-half feet will usually reduce non-gangrenous intussusception but will not reduce gangrenous intussusception nor risk rupture of the intussuscipiens or intussusceptum. Accordingly, conservative management consists in inserting a Foley catheter into the rectum, holding the buttocks together, and running in barium under hydrostatic pressure of three feet. If complete reduction of the intussusception occurs, the intussuscepted loop will disappear and barium will break through the ileocecal valve into the terminal ileum. No further treatment is then necessary, and recurrence of the intussusception is extremely rare.

If the intussusception cannot be reduced by hydrostatic pressure with barium, or if any doubt exists as to the completeness of the reduction, or if there are continuing symptoms of peritoneal irritation to cause suspicion of the viability of the intussuscepted bowel, immediate laparotomy is indicated. This can ordinarily be accomplished through a McBurney or short transverse right-sided incision.

Hirschsprung's Disease (megacolon): Concepts of the cause and treatment of megacolon are in process of revision, and the condition is no longer regarded as an idiopathic dilation of the colon. Formerly, cases in which intestinal dilation and severe constipation were present and in which a tremendously dilated colon with poor haustral markings was observed in roentgen studies with barium enema were grouped as "idiopathic megacolon." It now seems better to divide such cases etiologically:

1. *Achalasic or aganglionic megacolon* (true Hirschsprung's disease). In this condition the parasympathetic ganglion cells of the myenteric plexus are absent. The aganglionic area, usually the lower rectum and the sigmoid colon, is narrow and spastic. The colon is greatly dilated above the aganglionic segment. Usually the anus and terminal rectum are normal.

2. *Functional megacolon.* In megacolon of this classification, the colonic dilatation is secondary to functional obstruction in the bowel. The origin of this functional obstruction may be dietary, psychologic (improper bowel training), endocrinologic (hypothyroidism and cretinism), or pain and spasm from an anal fissure.

3. *Organic megacolon* is that which is caused by an anal stricture, by inadequately repaired anal atresia, or by extrinsic or intrinsic bowel tumor that mechanically obliterates the lumen of the bowel.

In functional and organic megacolon the cause is apparent and the treatment is to eliminate the cause.

As to aganglionic megacolon, data obtained through pathological examination of the diseased segment and results of studies of physiological pressure with intracolonic balloons have led to a changed concept of therapy. Whereas previously the dilated segment was looked upon as the diseased segment, and was resected (oftentimes after a preliminary colostomy proximally), nowadays attention is directed to resecting the aganglionic distal narrow segment as a means of relieving the megacolon. Svenson[14] and Hiatt,[7] both advocates of this concept, have developed a sphincter-saving operation which permits resection of the diseased aganglionic segment with preservation of the anus and its sphincter. In that procedure the ganglion-containing dilated portion of the bowel above the resected narrowed segment is brought down through the anal sphincter and sutured to the anal mucosa. Further time will be necessary to evaluate late results, but the immediate results have been highly satisfactory.

It is worthy of emphasis that this operation is applicable only if the megacolon is of aganglionic type. Diagnosis of this condition is best established by noting the onset of obstructive symptoms, which is invariably at birth or within the first few days thereafter. The narrow obstructed rectosigmoid is best visualized roentgenographically in oblique films taken after the large redundant sigmoid colon has been manipulated out of the pelvis with the patient in the Trendelenburg position. Svenson emphasized that, since many patients with aganglionic megacolon also have an atonic bladder, cystometrograms with residual urine determinations are advisable preoperatively.

Once the diagnosis of true congenital megacolon has been made, operation should be considered if the roentgenographic characteristics are present or if the disease is progressive. For extremely sick patients, preliminary colostomy may be necessary; otherwise, a one-stage procedure is safe and satisfactory.

How some patients with megacolon were cured previously by resection of the dilated segment is subject for speculation.

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Treatment of the Nephrotic Syndrome

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• The nephrotic syndrome may be due to varied cause. It may end fatally or in complete healing. No specific cure exists as yet, and basic treatment is dietary. The degree of edema does not necessarily hold a direct relationship to the status of the kidneys or to the eventual outcome.

THE NEPHROTIC SYNDROME is a disease state characterized by edema, hypoproteinemia, lipemia, proteinuria, and perhaps evidences of a degenerative renal lesion in the urinary sediment. Its etiologic delineation is varied, and often cannot be determined. The syndrome may take place as a consequence of glomerular nephritis when this disease enters the degenerative stage, and it has been seen in association with amyloidosis. It is thought to occur sometimes as a "hypersensitivity reaction" to a variety of stimuli, the terms lipoid nephrosis, pure proteinuria and prerenal proteinuria having been used to describe this condition, which occasionally may be cyclic.[1,2,3,7,9] Rytand[12] described patients in whom the nephrotic syndrome was associated with poison oak dermatitis. The author has observed patients in whom it seemed to be induced by the administration of gamma globulin to ameliorate rubeola, by multiple insect bites, by therapy with penicillin and by the use of sulfonamides.

While the nephrotic syndrome occurs most frequently in childhood, it may occur at any age. In some cases the disease may terminate fatally, but in a substantial number it may disappear and eventually heal completely. This difference in outcome is unexplained, but it does not appear to depend entirely upon the cause of the disease.

No specific cure for the nephrotic syndrome exists as yet. For reasons given in detail elsewhere[2,4,5,8,10] the author believes that necessary treatment consists of maintenance of a large fluid intake and the use of a calorically sufficient diet containing a minimum but adequate amount of protein. For adults, this minimum adequate amount of protein has been shown by the careful studies of Sherman and his associates[13] and by Hegsted and co-workers[6] to be no more than 0.5 gm. of protein per kilogram of body weight. To this amount of dietary protein should be added an increment equal to that excreted in the urine. So far as the author knows, the actual minimum adequate amounts of protein necessary for children have not been established; the usual estimates of 1.5 to 2.5 gm. of protein per kilogram of body weight may well be excessive. In the Clinic for Renal Disease of the Stanford University Outpatient Department, for some years children with renal disease have been treated with calorically adequate diets containing from 0.75 to 1.0 gm. of protein per kilogram of body weight to which has been added an amount equal to that lost in the urine. No deleterious effects upon their growth or development have been observed. Daily rations of calcium and vitamins are given as dietary supplements.

Variations from day to day in the amount of subcutaneous edema are not necessarily prognostic, for they do not always reflect parallel changes in the status of the kidneys or in the fundamental disease process. Treatment to control the edema consists mainly of sodium restriction. In general, the daily intake of sodium chloride must be reduced to less than 1.0 gm. The use of certain currently available ion exchange resins to diminish the gastrointestinal absorption of sodium has not been helpful for the treatment of children with the nephrotic syndrome in the author's experience.

If fluid accumulation increases despite efforts to control it through dietary sodium restriction, it may be evacuated. It may be withdrawn from the chest and abdominal cavities by paracentesis. Southey tubes are helpful for removal of large subcutaneous accumulations of fluid in the lower extremities. In certain instances, the administration of corticotropin (ACTH), cortisone or salt-poor human albumin solution may be of value. Some patients treated with corticotropin or cortisone may experience remissions for varying periods. Mercurial diuretics should not be used to remove fluid since they are nephrotoxic and since they are not as a rule effective in conditions like the nephrotic syndrome which are associated with heavy proteinuria.

While anemia of some degree often accompanies the nephrotic syndrome, it is usually asymptomatic and requires no treatment other than insuring an adequate dietary intake of iron and vitamins. Attempts to correct it through the use of iron, liver,

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B_{12} or other hematinic substances have not been successful. If the patient becomes too weak and fatigued for his general needs and comfort, blood transfusions are helpful. The beneficial effect is transient, however, and once begun they often must be repeated to maintain symptomatic relief.

The use of watermelons and watermelon juice for treatment of the nephrotic syndrome recently has had considerable popularity among certain patients and has been widely publicized. Aside from being a novel and pleasant source of fluid, watermelons are of no proven value in the treatment of this condition.

Patients with the nephrotic syndrome are particularly vulnerable to infection. Peritonitis occurs rather frequently, and it was a principal cause of death before antibiotic agents were available. While it is not intended to suggest that all febrile illnesses in these patients should be treated indiscriminately with antibiotics, such drugs should be used without delay and in as specific a manner as possible when it seems likely that the illness is of bacterial origin. If possible, appropriate cultures to determine the particular organism involved and its antibiotic sensitivities should be obtained *before* treatment is begun. Certain patients appear to be more prone than others to peritonitis, and in some of them one bout follows another with perhaps no more than a few weeks intervening. Small daily prophylactic doses of a broad spectrum antibiotic have been used with success in preventing or in diminishing the frequency of these attacks.

Some patients with pronounced edema and abdominal distention from ascites have repeated episodes of febrile illness associated with abdominal pain and tenderness. Initially the symptoms and signs closely mimic those of acute bacterial peritonitis, but disappear completely in one to two days even without treatment and the ascitic fluid remains sterile. On careful examination a thrombosed vein may be noted in the abdominal wall, with an accompanying streak of erythema contrasting with the pallor of the swollen, edematous abdomen. The tenderness may be more pronounced in the affected area than over the rest of the abdomen, and at times the thrombosed vein may be palpated as a tender cord. These clinical observations have been confirmed by pathological examination. While this condition is transient and requires no treatment, it is so closely similar to acute bacterial peritonitis that antibacterial therapy must be instituted without delay and continued until fever disappears and the situation is clarified.

A hopeful attitude should be maintained, particularly with children.[11] Parents should be warned against showing anxiety, for psychologic problems in these children often stem from this cause. For the same reason, the dietary principles outlined previously should be incorporated easily into the family mealtime routine. Children with the nephrotic syndrome should be treated as normally as is possible. They should attend school, they should play with other children, and they should be taught to consider the edema as a temporary hindrance which can be controlled and tolerated rather than as a symbol of sickness and disease.

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Feeding Premature Infants

Recent Modifications in the In-Dwelling Nasogastric Tube Method

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• In a two-year period some 600 premature infants were fed through an in-dwelling plastic nasogastric catheter. The results suggest that this method is practical and less fatiguing than gavage or dropper feeding. To increase the ease and safety of this procedure certain modifications in the technique of taping the catheter and of preparing its leading end are suggested.

USE OF polyethylene nasogastric tubes for the feeding of premature infants has now had a two-year clinical trial. The method has been used in more than 600 cases. Originally developed to eliminate the factor of feeding fatigue in weak premature infants, it has proved a practical alternative to the more exhausting gavage and dropper methods. Often a premature infant who becomes cyanotic when attempt is made to pass a gavage tube will sleep throughout the feeding period when a nasogastric tube is in place, and can be fed, without distress, at any interval desired by the physician.

Extensive use of this method by several pediatric centers* has allowed comparison with other feeding procedures and has led to certain important modifications in technique. Answers to some of the problems that arose concomitantly with widespread use of the plastic catheter have been provided. More detailed information is now available on the relatively minor questions of the best method of taping the tube in place and the length of time the tube should remain in one nostril, as well as on the major questions of esophageal irritation, gastric perforation, and the possibilities of tracheal instead of esophageal intubation.

The indications for the in-dwelling nasogastric tube remain as originally described.[3] It is designed only for those infants who are too weak to suck well, and those who become cyanotic with gavage or dropper feedings. The tube may be inserted with a minimum of disturbance to these babies, and once in place it may remain for as long as twelve days before it is necessary to change it to the opposite nostril, and in the esophagus for as long as 65 days. Usually it is not necessary to feed by this means for so long a time. As soon as the baby begins to gain weight and strength, frequent attempts should be made to start nipple feedings, and once the baby is able to take adequate amounts in this fashion the tube should be withdrawn.

The method of taping the tube in place has occasionally caused difficulty. A premature infant who is too weak to suck is often surprisingly adept at prying loose any exposed portions of the tube. As was suggested in the original communication,[3] a "generous amount" of adhesive tape should be used. To avoid sharp turns in the tube, it should be held in place in a sweeping curve from the nostril to the opposite cheek, and thence to the temporal region (Figure 1). Standard adhesive tape applied in liberal amounts usually is only temporarily and mildly irritating to the skin of the baby. Owing to the high humidity maintained in the units in which most premature infants are kept, plastic tape seldom serves the purpose.

Now and then a baby dislodges a tube despite firm taping. Several times in the author's experience the tube was swallowed and appeared in the feces some few days later. As a precaution, therefore, an overhand knot should be tied in the exposed end of the tube, and the knot then taped to the baby's forehead (Figure 2).

The factor of esophageal irritation is difficult to evaluate. Results of observations thus far suggest that it is not a prominent feature. In no instance has

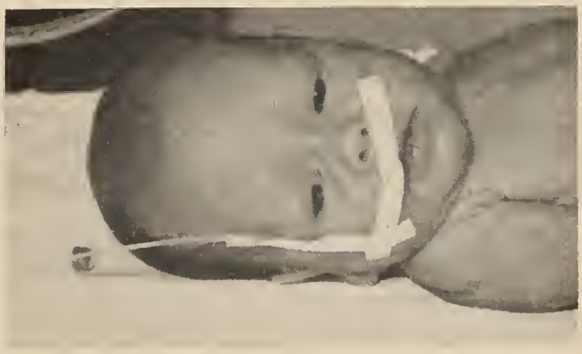

Figure 1

Presented as part of a Panel Discussion on What's New in Pediatrics before the Section on Pediatrics at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

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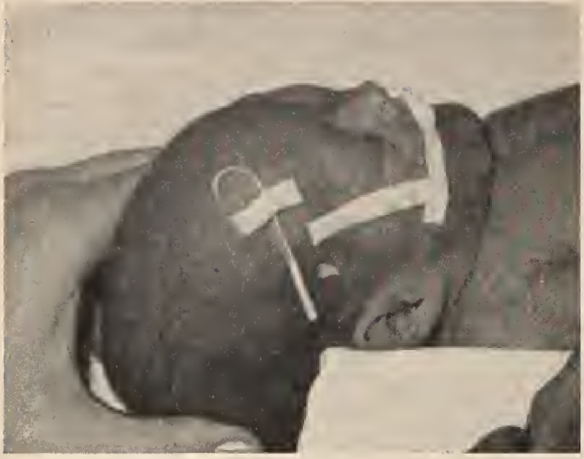

Figure 2

death been attributed to ulceration, and the incidence of ulceration associated with this method of feeding apparently is not inordinately high. (Gruenwald and Marsh[2] reported ulceration in 16 2/3 per cent of 310 infants who had not had esophageal intubation.) Although there is no direct evidence that the incidence of ulceration is related to the duration of intubation, certainly the shortest possible period is to be desired.

Although gastric perforation is a rare concomitant of feeding by the method under discussion, it is an extremely important consideration. Apparently there are at least two pertinent factors: the size of the tube, and the method of preparing the leading end. Use of a tube with an internal diameter larger than .07 cm. (external diameter equivalent to No. 3 French catheter) increases the likelihood of gastric perforation. Two instances of the occurrence of perforation under these conditions have been reported. It is not necessary to use the larger tubing, since most milk preparations will pass fairly easily through the No. 22 or No. 23 needle that is inserted into the tubing. Originally it was suggested that the end of the tube be cut square and smoothed with fine emery paper; but even thus prepared the leading end can still be hazardous, and to reduce the danger the tip may be sealed with a coating of paraffin and then an elliptical side opening made in the tubing just above the paraffin plug. Cutter[1] recently suggested a valuable modification: If, instead of paraffin, a small bubble of Duco liquid cement is allowed to dry on the tip, a perfectly smooth and durable leading edge that is non-irritating to the gastric mucosa is formed.

Although there is always the dangerous possibility the tube may be introduced into the trachea rather than into the esophagus, thus far there has been no problem in this regard. Often an infant's first reaction to the entering tube is an attack of sneezing, and occasionally coughing, but there is little respiratory distress. The sneezing often continues for several minutes, but thereafter the infant appears to have little awareness of the tube. To make sure that the tube is correctly placed, 1 cc. of air should be injected through the tube and the sound of air entering the stomach listened for with a stethoscope over the abdomen. As a final check 0.25 cc. of saline solution should be infused and the infant watched for signs of respiratory distress.

This method of feeding is not entirely without hazard, and despite its apparent advantages over older methods it cannot be used as a substitute for skilled nursing care, nor simply as a convenience to the staff.

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California Encephalitis Virus

A Newly Described Agent

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• *In three cases of encephalitis in humans that occurred in the area where the newly described California virus was isolated from mosquitoes, serological evidence seemed to indict the California virus as the etiological agent. In the case of an infant with very severe disease, the serological evidence was convincing; the evidence was almost as strong in the case of a seven-year-old boy; the results in an adult were equivocal.*

Inapparent infection in man is quite common as indicated by neutralization tests on the sera of nearly 600 residents of California, but encephalitic manifestations of infection are extremely rare. In Kern County, California, where the virus was discovered, approximately 11 per cent of the population has been infected. Infection rates are higher in adults than in very young children.

Absence of neutralizing antibodies from 64 specimens of blood from persons in Japan, Washington, and other states supports the specificity of the neutralization test in man and suggests that this virus is absent or is not being similarly transmitted in some areas.

Serological evidence from serial bleedings of two sick horses suggested, but did not definitely establish, that this virus leads to a naturally acquired encephalomyelitis in horses. Serological tests with the viruses of western equine and St. Louis encephalitis did not lead to any other etiological diagnosis in the sick animals studied.

Results of neutralization tests on the sera of eight horses and three cows in Kern County suggested extremely high infection rates, and an immunity rate of 18 per cent was noted in rabbits and ground squirrels. In the natural biological cycle rabbits and ground squirrels are suspected as the possible counterpart of birds in the St. Louis and western equine virus cycles. There is no evidence from field or laboratory to indicate that birds become infected with the California virus.

Sera from 33 mammals other than man were collected from Northern California and Washington. All were free from neutralizing antibodies, again supporting the specificity of positive findings from Kern County.

Part I.[*] Evidence of Natural Infection in Man and Other Animals

A NEUROTROPIC VIRUS, which was named the California virus,[3,7,8] was isolated in 1943 and 1944 from three separate pools of mosquitoes[†] from Kern County, in the San Joaquin Valley of California. This virus was not found to be related to any other virus discovered and described previously, with which it was compared. The California virus is apparently a new member of the rapidly growing family of arthropod-borne encephalitic viruses. The isolation, identification and description of its biological properties are presented in another paper in this series.[9] This virus is pathogenic by intracerebral inoculation to mice, hamsters and cotton rats, and also multiplies in embryonated hen's eggs. The clinical and pathologic manifestations in laboratory animals resemble those produced by the arthropod-borne encephalitic viruses endemic in the same valley area—the western equine encephalomyelitis and the St. Louis encephalitis viruses. The virus multiplies and circulates in the blood of rabbits and ground squirrels, after peripheral inoculation, although the animals remain free from obvious signs of infection. Thus, the agent is presumably available in nature for mosquito infection. In the laboratory, mosquitoes have been infected and by their bite have transmitted the virus.[10]

CLINICAL DISEASE IN MAN

Since the first California virus strain (BFS 91) was isolated and identified in 1943, evidence of clinical disease in man has been sought. Because the virus produced encephalitis in certain laboratory animals and apparently has so many characteristics of the arthropod-borne group of encephalitis viruses it seemed reasonable to look for it, by serological tests or isolation methods, as the cause of clinical encephalitis in man. As will be pointed out, sero-

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[*] Parts II and III are appearing in another journal.[9, 10]

[†] Isolated from two pools of *Aedes dorsalis* Meigen collected in June 1943 and June 1945 and from one pool of *Culex tarsalis* Coquillet collected in July 1944.

logical evidence of inapparent infection of man in Kern County, California, was easily found, but in only three cases of encephalitis did serological evidence of any type support or partially support supposition that the California virus caused the disease. Although numerous attempts have been made, virus of this type has not been isolated in a fatal human case nor from specimens of blood taken during the acute phase. Following are reports of the three cases in which there was indication that the disease might have been caused by the California virus.

CASE 1: The patient, a 2-month-old male of Mexican descent, had residence and potential exposure in Delano, California (Kern County). On September 6, 1945, the mother noticed that the child was very irritable and cried out periodically as if in severe pain. Occasionally he had convulsions. He had not vomited, but the mother said he had been constipated. The illness continued for two days before she took the child to the outpatient department of the Kern County General Hospital. He was immediately hospitalized (Sept. 8), with a diagnosis of encephalitis. The child was thin and acutely ill. The anterior fontanelle was bulging. He lay in hyperextension with eyes fixed and rotated upward. No abnormalities were noted in examination of the ears. The chest was clear. The abdomen was rigid, but the patient was crying hard. Tendon reflexes were hyperactive and muscles were tense. The rectal temperature upon admittance was 104 degrees F. The maximal rectal temperature (degrees Fahrenheit) on each of the six following days was: 104.6, 104.4, 104.0, 101.0, 100.4, 98.8; and from then on it was normal.

A spinal tap was made just after admittance to hospital and injections of penicillin were started, 5,000 units every three hours night and day until Sept. 13.

In the first two days in the hospital the child had convulsions several times a day when disturbed, and there were frequent twitchings. He remained very "rigid," slept a great deal and had to be fed by gavage. By Sept. 11 (fourth hospital day), definite clinical improvement was noted. By Sept. 13 he took his formula by bottle and retained it, and then appeared more relaxed. He was discharged from the hospital shortly thereafter.

(Later the health department tried to locate the child but was unsuccessful. Three years later a research staff nurse found the family. She was told by the mother that the child had not recovered completely from the illness and had continued to have occasional mild convulsions. He had never been able to sit up and constantly held his left arm "drawn up." He had died at home of what his mother stated was pneumonia, at the age of 11 months.)

Results of laboratory examinations in Case 1 were:

September 8. Spinal fluid: leukocytes 2,875 per cu. mm., all polymorphonuclear cells; appearance, cloudy; no organisms observed in a smear; globulin reaction, 3 plus.

September 10. Result of a Kahn test was negative for syphilis. There was a faint trace of albumin but no sugar in the urine, and occasional erythrocytes and a few bacteria were noted. Erythrocytes numbered 2,240,000 per cu. mm. of blood, and the hemoglobin content was 5.7 gm. per 100 cc. The color index was 84. Leukocytes numbered 10,400 per cu. mm.—56 per cent lymphocytes, 37 per cent polymorphonuclear cells, and 2 per cent monocytes. The spinal fluid contained 760 cells per cu. mm.—71 per cent lymphocytes and 29 per cent polymorphonuclear cells. It was slightly turbid. The globulin reaction was 3 plus. Sugar content was 41.6 mg. per 100 cc. No organisms grew on a culture and none were observed on a smear. The gold curve was 0000023211.

September 13. In an x-ray film of the chest the lung fields were observed to be clear. Result of a Mantoux test was negative for tuberculosis.

September 15. Erythrocytes numbered 2,320,000 per cu. mm. of blood and the hemoglobin content was 7.1 gm. per 100 cc. Leukocytes numbered 12,050 —lymphocytes 40 per cent, basophils 2 per cent, eosinophils 2 per cent, myelocytes 4 per cent, stab cells 7 per cent, polymorphonuclear cells 42 per cent, and monocytes 3 per cent.

Virus studies. Blood serum withdrawn and frozen on September 8 (two days after onset of illness) was injected in mice and guinea pigs by the combined intracerebral and intraperitoneal route. Virus could not be isolated by this means. A specimen of the same serum was tested for neutralizing antibodies against western equine, St. Louis and California virus (strain BFS-283) simultaneously with a specimen drawn on September 20 (14 days after onset). A 1:10 serum dilution of acute and convalescent specimens protected all the mice against 5,000 LD_{50}* of western equine virus (antibodies probably of maternal origin). Antibody against St. Louis virus was not detectable at the level of a 1:10 serum dilution in either specimen. Both specimens were tested twice in a 1:10 dilution against approximately 25 and 250 LD_{50} of the California virus. The first specimen offered no apparent protection against California virus in either test, but protection was complete against both dilutions of virus in both tests with the convalescent specimen. The results of the neutralization tests (no change in titer to western equine virus, absence of St. Louis virus antibody and a rising titer from negative to protection against more than 250 LD_{50} of the California virus) support the diagnosis of California virus infection.

Complement-fixation tests were performed against the antigens of western equine, St. Louis and Russian spring-summer encephalitis viruses (the latter as a mouse brain control, since all antigens were prepared from mouse brain), but the reactions were slightly anticomplementary. However, the titers with each antigen (positive in a 1:2 or 1:4 dilution of serum only) were identical, indicating that there were no complement-fixing antibodies against the western equine or St. Louis viruses and confirming a belief that the neutralizing antibodies for western equine virus were of a maternal source and probably not acquired during the current illness. Data from studies of mares and colts show that although maternal neutralizing antibodies against western equine virus are regularly transmitted to the offspring, complement-fixing antibodies are not. Unfortunately, at the time of the illness of the patient complement-fixing antigens had not been prepared from the California virus. The serological evidence of BFS-283 (California virus) infection in this case appears to be very strong.

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*5,000 times the lethal dose for 50 per cent of mice.

Although the sugar content in the spinal fluid was slightly low and the cell content relatively high for a virus infection, neither excludes the possibility of a virus infection. In small infants infected with the equine viruses, cell content is occasionally as high as it was in the present case. In light of the fact that the hospital laboratory, at about the same time, reported slightly low spinal fluid sugar content in other cases of what was believed to be virus infection of the central nervous system, it is possible that a laboratory error occurred; or the fluid may have been held overnight before testing, a common practice in that hospital at the time.

Case 2: A white boy 7 years of age who had lived in Arvin, California (Kern County) for three weeks, became ill Aug. 12, 1945. He was hospitalized Aug. 18 with a preliminary diagnosis of encephalitis or meningitis. The parents reported that fever had developed six days before admittance and that the maximal temperature was 104 degrees F. The patient had vomited, lost appetite, then had become drowsy and finally complained of headache. The maximal temperature during the hospital stay was 102.4 degrees F. When the patient entered the hospital, the spinal fluid contained 175 cells per cu. mm., all lymphocytes. There was a trace of globulin in the fluid, and the sugar content was 34.8 mg. per 100 cc. Leukocytes per cu. mm. of blood numbered 5,500—52 per cent lymphocytes. Paralysis was not present and the patient was discharged Aug. 24. The diagnosis was encephalitis, type unknown. When examined again Sept. 4 the patient had no apparent residual effects.

Virus studies. Specimens of blood were obtained six and 24 days after onset of illness. Neutralizing antibodies for western equine or St. Louis virus could not be demonstrated. When these specimens were tested for complement fixation a year later, both were anticomplementary. Serum (undiluted) drawn in the acute phase of the illness did not neutralize California virus (BFS-283) at a level of 25 and 125 LD_{50}, while in three separate tests the specimen taken during convalescence gave a neutralization index of approximately 125.* A 1:5 serum dilution of the convalescent specimen offered partial protection against both dilutions of virus. Unfortunately, the acute phase serum became contaminated and it could not be used to repeat the neutralization test against California virus to confirm the negative result in the first test. Thus, the serological evidence in this case is not quite as strong as that in Case 1, but it would ordinarily be considered confirmatory diagnostic evidence for a well-recognized type of virus disease.

Case 3: A white agricultural worker 22 years of age, living in Arvin, California (Kern County) became ill on Aug. 30, 1945, and was hospitalized at Kern County General Hospital on Sept. 2 with a provisional diagnosis of encephalitis. The course of illness was that of typical mild encephalitis or non-paralytic poliomyelitis, with fever up to 102.2 degrees F., severe headache, and stiffness of the back and neck. The cerebrospinal fluid contained 28 cells per cu. mm., of which 52 per cent were polymorphonuclear. Reaction to a test for globulin was negative. No other tests were performed on the fluid. At the time of admittance, leukocytes numbered 10,300 per cu. mm. of blood. The patient recovered after an illness lasting approximately one week.

Virus studies. Blood specimens were obtained two and 13 days after onset of illness. Virus could not be isolated from the acute phase specimen. There were no neutralizing antibodies against the western equine virus in either serum. In a "screen test" against the St. Louis virus, the convalescent specimen protected three of four mice against 15 LD_{50} of virus. In a repeat, quantitative test, including the acute phase serum, using undiluted serum against 25 and 250 LD_{50} of virus, the convalescent specimen again protected slightly and the acute phase serum did not protect. The neutralization index of the convalescent specimen was calculated to be between 25 and 50, the equivocal range. At the same time the two specimens were tested in a 1:5 dilution against 25 and 250 LD_{50} of St. Louis virus, and in this dilution neither specimen protected against either dosage of virus. This confirmed the result of the test on the undiluted serum, indicating that the antibody titer was not in the range of significance. When the complement-fixation test was made, the serum from the early specimen was anticomplementary and the convalescent specimen gave positive reaction in a dilution of 1:8 with the St. Louis virus in two separate tests, and negative reaction to western equine and Russian spring-summer viruses, the latter used as an antigen control for the mouse brain component. The results of both the neutralization and complement-fixation tests are what might be expected in the early phase of a St. Louis infection; the second specimen of serum was taken only 13 days after onset of the illness, and neutralizing antibodies to this virus usually develop quite slowly. However, the titers by both types of test lie in the equivocal range. Since the authors were not satisfied that a serological diagnosis had been made, both specimens (undiluted) were then tested for neutralizing antibody to California virus, using 20 and 100 LD_{50} of virus. There was no protection by the acute phase serum, but almost complete protection against both virus dilutions was afforded by the convalescent specimen, giving it a neutralization index slightly greater than 100, which it is believed should be considered significant. Not enough serum remained for further testing of any kind.

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*The neutralization index expresses the amount of protection afforded by the serum in terms of comparison with a normal serum specimen. In most encephalitis virus infections, any index of 50 or greater is considered significant.

It is difficult to say whether California or St. Louis virus was the etiological agent (in Case 3) or whether a combination of the two or independent infections with both, the one following the other after a short interval, was responsible. It has been well established that the two are unrelated immunologically.[9] However, there was slightly stronger evidence that California virus was the infective agent than that it was the St. Louis virus.

ADDITIONAL VIRAL STUDIES

For several years the authors have made combined clinical and virus studies in cases of suspected neutropic virus infections in Kern County General Hospital. Specimens of sera and feces have been collected routinely. In the early years of the study these specimens were refrigerated; more recently they have been frozen and transported to the San Francisco Neurotropic Virus Unit at the Hooper Foundation under temperature conditions similar to those employed for storage. Efforts were made by means of neutralization and complement-fixation tests to aid in the specific etiologic diagnosis of western equine and St. Louis encephalitis and mumps meningoencephalitis. In cases in which there was no serologic evidence of these diseases and in which there was no flaccid paralysis, the feces were usually tested for poliomyelitis virus.

After isolation and adaptation of the three strains of California virus, sera from the large residual of undiagnosed cases were tested for antibodies against the California virus. Smaller numbers of sera from patients from other parts of California were also tested. This series of tests with the California virus began with the summer collection of 1944 and continued through 1949. It was in this series that the rising titers of neutralizing antibody were noted in the three cases reported herein. In the latter part of 1946 a benzene-extracted complement-fixing antigen for the California virus was prepared,[2] and a few sera were tested for both neutralizing and complement-fixing antibodies that year. In 1947, 1948 and 1949, the complement-fixing antigen was included with a "battery" of antigens (usually western equine, eastern equine, St. Louis, Japanese B, mumps, New Castle and California viruses) used for the primary testing of the sera from all patients. The California virus neutralization test was applied to these sera, when the result of every other test, including neutralization tests for western equine and St. Louis virus, was negative or the titer did not increase after the infection, provided there was an adequate amount of serum left. In many instances sufficient serum was not available.

1. *Neutralization Tests.*

Method. Infected mouse brains were triturated in a 10 per cent rabbit serum-broth to make a 10 per cent mouse brain suspension. This was slowly centrifuged and the supernatant frozen as a source of virus. Serial five-fold or ten-fold dilutions of virus were prepared in a 10 per cent rabbit serum-broth. After selecting appropriate virus dilutions, 0.2 ml. of each was mixed with 0.2 ml. of undiluted serum and the mixtures were then incubated for two hours at 37° C. All tubes were then placed in an ice-water bath. Mice were inoculated with the serum-virus mixtures, beginning immediately after the two-hour incubation period. Animals, three to four weeks old, were inoculated intracerebrally in groups of four. Deaths were recorded for a period of ten days. In the early tests, two dilutions of virus representing 10 to 20 and 50 to 100 LD_{50} of virus were used. In later years, four or five ten-fold dilutions of virus were employed. The highest dilution was the equivalent of 25 to 50 LD_{50} and the lowest 1,000 to 10,000 times this amount of virus. Any serum that neutralized 10 to 20 LD_{50} was classified as equivocal and any that neutralized 50 to 100 LD_{50} as positive.

2. *Complement-fixation* tests were performed with the modified benzene-extracted antigen described by Espana and Hammon[2] and the control sera made in guinea pigs by the method of Hammon and Espana.[5] The technique employed in the test was essentially that described by Casals.[1]

RESULTS

Sera from 188 patients were tested for neutralizing antibody against California virus. The results were positive in 11,1 per cent of the cases, equivocal in 7 per cent, negative in 81.1 per cent. Two hundred and ninety-four pairs of sera were subjected to the complement-fixation test and the results in all cases were completely negative. The neutralization test results are presented in Table 1. None of the sera can be assumed to be from cases of current infection with this virus, because either they were negative or the titer of the convalescent phase specimens was no higher than that of the acute phase serum. The results are interpreted to represent the effect of previous experience with the virus and probably are fairly representative of the infection rates in the general population of this area. In Table 1, in calculating the percentage of positive reactions, the equivocal results were calculated both as positive and negative, since it is uncertain in which group they properly belong. The cases are tabulated by

TABLE 1.—*Results of neutralization tests on sera of persons[*] residing in Kern County, California, by age and by years of residence in the county.*

	Residence in county in years					Age in years								
Results	<1	1-4	5-9	9	Unknown	<1	1-4	5-9	10-14	15-19	20-29	>29	Unknown	Total
Negative	25	62	32	21	14	11	30	38	25	15	18	14	3	154
Equivocal[†]	1	4	6	1	1	0	2	1	3	3	0	2	2	13
Positive	4	5	2	5	5	0	0	2	1	3	8	7	0	21
Total	30	71	40	27	20	11	32	41	29	21	26	23	5	188
% Positive[‡]	13.3	7.0	5.0	18.5	25.0	0	0	4.9	3.4	14.3	30.8	30.4	0	11.1
% Positive and equivocal	16.7	12.7	20.0	21.4	30.0	0	6.2	7.3	13.8	28.6	30.8	39.1	40.0	18.1

[*] These results were obtained with the convalescent phase serum of patients apparently suffering from a neurotropic virus infection, but in no instance in this group was the second titer higher than the first when the second was positive.

[‡] All equivocal results considered negative.

[†] Serum neutralizing 10 to 20 LD_{50} was classified as equivocal.

length of residence of the patient in the county and by the age of the patient. The length of residence could not be determined for 20 persons; tests of sera from five of them were positive for the virus, and from one equivocal. Proper distribution of these might significantly change the results in any one group. Although positive reactions occurred in an unexpectedly large number of cases after only one year of residence, there appeared to be a trend toward increasing incidence of positive reaction as the length of residence in the area increased. The proportion of infected persons increased with age. If the virus neutralization indicates previous infection, it is quite obvious that infection rates are high in the community. Since results of tests failed, except in rare instances, to identify this agent as the cause of clinical disease of the central nervous system, if infection frequently produces clinical disease, it is generally a form of disease not yet suspected and, therefore, not studied for a serological response to this virus. On the other hand it seems more likely that infection is inapparent in most instances. The immunity rates observed are closely comparable to those observed in surveys in the same community made in a similar manner for western equine infection, but considerably lower than for the St. Louis virus.[11] The age distribution of the inapparent infections produced by the latter two viruses,[11] however, does not parallel that of the California virus, suggesting that the principal vectors and conditions of exposure are not identical. In further support of this hypothesis is the fact that in two of the three instances in which the California virus was isolated it was from *Aedes dorsalis*[9], and isolations of western equine and St. Louis viruses have rarely been obtained from this species, but are usually from *Culex tarsalis*.[4] Further support is gained from the differences in distribution of antibodies found in rodents and birds, to be discussed later in this paper.

In 1948 this virus was supplied to Dr. John B. Enright, then at the Viral and Rickettsial Disease Laboratory of the California State Department of Public Health, who tested paired sera in cases of suspected neurotropic virus infections, including poliomyelitis, from all portions of California, except Kern County. Dr. Enright and Dr. E. H. Lennette, director of the laboratory, reported to the authors the results of these tests on sera from 1947 and 1948. The total number of cases from California in the survey, identified by geographical area, was 292. There were 23 instances of positive reaction, and in only one instance did the titer rise between an early and a late serum, and in that case the rise was not considered significant. Most of the patients who had positive reaction (14) were from the central valleys (Sacramento and San Joaquin), two from the San Bernardino Valley, two from Los Angeles and five from the San Francisco Bay area. Of 157 patients from the hot valley areas where other mosquito-borne diseases occur, 10 per cent had positive reaction, while 5.2 per cent of 135 from all other areas had positive reaction. These differences are not statistically significant, but are in the direction expected. It is interesting to note that the percentage of positive results in patients from the three hot valley areas was almost identical to that in Kern County (11.1 per cent). The infection rate for California as a whole was 23 of 292 (7.9 per cent).

Specimens of blood from persons who lived outside of California were tested in an attempt to obtain some information regarding the geographical distribution of the virus and indirectly to obtain information about the specificity of the neutralization test in man. The results are presented in Table 2. Specimens from ten adults in the state of Washington, five in Colorado and 24 in Tokyo were all negative for the disease. Among the specimens from Colorado and Japan not a single equivocal result was obtained. This evidence supports the specificity of the results in Kern County and suggests that the "equivocal" results in Kern County were also significant. It also suggests that geographic distribution of the virus may be somewhat limited.

Further evidence of the limited distribution of the virus and the specificity of the neutralization test has been obtained from other investigators to whom supplies of the strain BFS-283 of the California virus were sent. Dr. Herbert A. Wenner of the University of Kansas reported that in tests of specimens from

TABLE 2.—*Results of neutralization tests for California virus infection in man and other animals from areas outside of the San Joaquin Valley.*

Animal and Area	Positive	Negative	Total
Man (Valley City, N.D.)	0	7	7
Man (Yakima Valley, Wash.)	0	10	10
Man (Colorado)	0	17	17
Man (Tokyo, Japan)	0	24	24
Man (Garden City, Kan.)	0	6	6
Ground squirrel (Northern Calif.)	0	6	6
Calf (Northern Calif.)	0	2	2
Jack rabbit (Yakima Valley, Wash.)	0	23	23
Cottontail rabbit (Yakima Valley, Wash.)	0	2	2
Total	0	97	97

seven patients in Valley City, North Dakota, and from six who lived in Garden City, Kansas, all with disease of unidentified cause, there were no positive results. He stated that in all cases the neutralization index was below 10. Dr. Morris Schaeffer of the U.S.P.H.S. Communicable Disease Center Laboratories reported that he had had specimens from twelve patients in Colorado tested, using 17 and 170 LD_{50} of virus. Results were negative.

CLINICAL DISEASE IN ANIMALS OTHER THAN MAN

In the laboratory, no recognized disease has occurred regularly in any species of animal experimentally infected with the virus by a subcutaneous or intraperitoneal route, or fed on by an infected mosquito. Clinical disease has been produced consistently only by intracerebral inoculation, a highly artificial route.

In the field, animal disease known to be due to this virus has not been encountered. Eight horses in Kern County that had encephalomyelitis were studied serologically to determine if the California virus were the responsible pathogenic agent. T. K. Brunner, D.V.M., of the Hooper Foundation, obtained specimens of blood during the early acute stage, if possible, or as soon thereafter as the disease was reported, and again later, usually after recovery. The specimens were examined first by neutralization test against the western equine and St. Louis viruses, and when none could be identified satisfactorily by this procedure, they were tested for complement-fixing antibodies against California, western equine and St. Louis antigens. In five of the eight cases results were negative by all the types of tests used and with all viruses.

The late serum specimen from one horse gave positive reaction in a dilution of 1:8 in the complement-fixation test with the California virus. The amount of serum from the earlier specimen was inadequate for performance of a similar test on it. However, the neutralization index for western equine virus increased from 248 to 14,500 in specimens collected 34 and 43 days, respectively, after onset. However, as the antibody response to western equine infection in horses is known to occur extremely early in the course of the disease, it is probable that the western equine infection occurred after the clinical disease and was not the cause. The disease, therefore, might have been caused by California virus.

Three specimens obtained from another horse, 2, 16 and 33 days after onset, all had a very high titer by neutralization test and by complement-fixation test to the western equine virus. For St. Louis virus the complement-fixation titer of the second day specimen was 1:8; of the 16th day specimen less than 1:4, and of the 33rd day specimen 1:16. For California virus the two earlier specimens gave negative reaction while the 33rd day specimen was positive in a 1:8 dilution. These results, although too confusing for definite interpretation, suggest that the California virus might have played a role.

Thus, in the cases of two horses serologic evidence was suggestive, although far from conclusive, that clinical disease was caused by the California virus.

INAPPARENT INFECTION OF ANIMALS OTHER THAN MAN

Soon after the California virus was isolated, attempt was made to find out what animals are infected under natural conditions in Kern County. Table 3 presents the results of a small-scale survey with the neutralization test. Immunity rates were relatively high in almost all mammals tested. The few large mammals tested were heavily involved, as they are with St. Louis and western equine infections. But a fairly high proportion of rabbits and ground squirrels also had positive serologic response, whereas not many of these small animals had positive reaction in earlier studies with the other two viruses.[6] These observations in the field led to tests in the laboratory to determine whether ground squirrels and rabbits might be a source of infection for mosquitoes. Results of those tests, as reported in another paper in this series,[9] were suggestive.

In eleven chickens tested there was no California virus antibody (Table 3) and, in the laboratory, inoculated chickens did not develop protective substances.[9] These results differ from those previously obtained in studies of chickens for reaction to the other two encephalitis viruses of the same area.[6]

To compare indirectly the significance of some of these results and at the same time to seek information regarding the geographical distribution of the virus, specimens of blood were obtained in other areas from some of the same species of animals that in Kern County had positive reaction in serologic tests. Results are presented in Table 2. Results of tests on ground squirrels and calves from North-

TABLE 3.—*California virus-neutralizing antibodies in Kern County wild and domestic animals*

Common name	Positive	Equivocal	Negative	Total tested
Cottontail rabbit	3	4	14	21
Jack rabbit	4	1	17	22
Ground squirrel	11	20	26	57
Antelope squirrel	0	0	1	1
Horse	8	0	0	8
Cow	3	0	0	3
Chicken	0	3	8	11
Total	29	28	66	123

ern California and on rabbits from Yakima Valley, Washington, were negative. Apparently antibody encountered in rabbits in Kern County may be specific and infection absent or less frequent in these other areas.

In 1947 a serologic survey of normal horses was made in the San Joaquin Valley, California, with the help of Dr. Brunner. Specimens were obtained from horses of various ages in July and again from the same horses in September to determine the proportion in which inapparent infection with the St. Louis and western equine viruses developed. Some of the specimens were also tested for complement-fixing antibody against the California virus. Blood from 34 of the animals did not fix complement at any time. A specimen from one horse, 12 months of age, that was drawn July 8 gave a negative reaction, while a second specimen drawn September 11 had a titer of 1:8.

The only conclusions that could be drawn from these equine studies were (1) complement-fixing antibodies to the California virus occasionally develop during the summer season, and (2) complement-fixing antibodies must be temporary, as are those for other arthropod-borne encephalitis viruses, since on the basis of previous sampling with the neutralization test a high proportion (all of eight tested had positive reaction) had been infected previously.

ACKNOWLEDGMENT

Most of the serological tests were done by Carlos Espana, Ph.D., and Gladys Sather, M.P.H. The authors were assisted in other aspects by several other members of the field and technical staff, especially Miss Mary Huston, R.N., field nurse. The authors are also deeply indebted to Dr. W. C. Buss, Health Officer, Kern County, and to several members of the medical and nursing staff of the Kern County General Hospital and Health Department.

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Carcinoma of the Colon

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• In a study of statistical data on 1,215 patients with carcinoma of the colon observed at a university hospital in a twenty-year period, it was noted that the overwhelming majority of patients who were living five years after operation had had no demonstrable extension to lymph nodes at the time of operation. In an increasing proportion of cases in the latter years of the period, diagnosis was made before the lesion was beyond an operable stage.

What with today's better surgical techniques that make it possible to adapt operation to a variety of situations that may be encountered when the diseased area is visualized, and with better methods of preparing a patient and of sustaining him during operation, the wide excision so often necessary for cure may now be carried out deliberately and without hurry.

The site of the lesion has great bearing on the prognosis, owing to the limits upon the extent of operation in some locations as against the possibility of wide excision of the original lesion and areas of metastasis in others.

An OUTSTANDING achievement of the past quarter century has been the decrease in morbidity and mortality associated with operations for cancer of the colon. The rather formidable operations of 25 years ago have become almost commonplace procedures. The gains are attributable to the introduction and perfection of basic surgical techniques for operations on the large bowel and to application of more efficient methods for diagnosis of cancer at an early stage. More meticulous preparation of the large bowel with intestinal antiseptics, the use of parenteral antibiotics and the adequate replacement of whole blood during operative procedures are measures which permit unhurried and deliberate operation. An ever broadening experience in surgical techniques permits wider excision of actually or potentially involved malignant tissue, with the prospect of offering a curative procedure to an increasing number of patients.

During the 21-year period from July 1930 to July 1951, 1,215 patients with carcinoma of the colon and rectum were observed at the University of California Hospital. Adequate five-year follow-up data are available on 852 of them (Table 1).

It was not possible to offer a curative operation to all of the 1,215 patients observed during the period of study. The malignant lesions were resectable in but 786 patients (64.7 per cent) while the remaining 429 patients had a palliative procedure, exploratory laparotomy, or purely supportive therapy (Table 2). It is apparent that the number of patients having resections has been increasing in later years, since in the group treated before 1946 the resectability rate was 59 per cent.

Definitive resection was performed in 503 patients five years or more before July 1951 with a five-year survival rate of 47.9 per cent (Table 3). It is significant that relatively few of the patients who had lymph node metastases at the time of operation were living at the end of five years and that the overwhelming majority (80 per cent) of patients who were living after a five-year period were those who had no demonstrable lymph node metastases at the time of operation.

TABLE 1.—***Carcinoma of the Colon and Rectum (University of California Hospital, 1930 to 1951)***

Site of Lesion	Number of Cases	Treated 5+ Years Ago	Survived 5+ Years	Per Cent Survived 5+ Years
Colon	549	370	119	32.2
Rectum	666	482	122	25.3
Total	1,215	852	241	28.2

TABLE 2.—***Increasing Proportion of Cases in Which Lesion Was Resectable at Time of Diagnosis***

	Total Series 1930-1951		Treated 5 Years Prior to 1951	
Site of Lesion	Number Patients	Resectability Per Cent	Number Patients	Resectability Per Cent
Colon	549	65.2	370	60.8
Rectum	666	64.1	482	57.6
Total	1,215	64.7	852	59.0

TABLE 3.—***Comparative Results in Cases in Which Metastasis Was and Was Not Present at Time of Operation***

	Metastases at Operation	No Metastases at Operation	Total
Operations	191	312	503
Living five years	47	194	241
Per cent five-year survival	20	80	47.9
Deaths within five years	143	119	262
Per cent mortality	55	45	52.1

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Presented before the Section on General Surgery at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

TABLE 4.—*Procedures Used for Right Colectomy*

Operative Procedure	Number Patients	Living and Well 5 Years or More	Living with Recurrence	Per Cent Living, Well
One-stage resection	53	32	0	60.4
Two-stage resection	12	5	2	41.7
Mikulicz resection	2	0	0	0
Total	67	37	2	55.2

TABLE 5.—*Survival After Right Colectomy in Cases in Which Metastasis Was and Was Not Present*

	Metastases at Operation	No Metastases at Operation	Total
Operations	29	38	67
Living five years	11	28	39
Per cent five-year survival	28.2	71.8	58.2
Deaths within five years	18	10	28
Per cent mortality	64.3	35.7	41.8

TABLE 6.—*Survival After Transverse Colectomy in Cases in Which Metastasis Was and Was Not Present*

	Metastases at Operation	No Metastases at Operation	Total
Operations	5	8	13
Living five years	2	5	7
Per cent five-year survival	28.6	71.4	53.8
Deaths within five years	3	3	6
Per cent mortality	50	50	46.1

TABLE 7.—*Procedures Used for Transverse Colectomy*

Operative Procedure	Number Patients	Living and Well 5 Years or More	Living with Recurrence	Per Cent Living, Well
One-stage resection	5	4	1	80
Two-stage resection	6	1	0	16.6
Mikulicz resection	2	1	0	50
Total	13	6	1	46.1

Right colostomy was performed on 67 patients five years or more before July 1951. In the majority of patients the operation was done in one stage (Table 4). The two-stage resection and the Mikulicz procedure were performed in a relatively small number of cases. Of those patients who underwent definitive right colectomy, 58.2 per cent were alive at the end of five years (Table 5) and the survival rate was considerably higher in the group of cases in which there was no metastasis at the time of operation.

It is generally agreed that cancer of the large bowel which can be extirpated should be dealt with radically not only by wide excision of the primary growth and the adjacent bowel but also by radical removal of the contiguous gland-bearing tissue. The favorable prognosis associated with lesions on the right side of the colon appears to bear direct relationship to the ability to remove wide expanses of mesentery by virtue of the anatomy in this area. In the one-stage right colon resection, for example, the usual procedure is removal of the entire mesentery of the right colon as well as a portion of the terminal ileum and its mesentery. The ease with which intestinal continuity can be reestablished by ileotransverse colostomy after removal of a large amount of gland-bearing mesentery has made such a procedure almost a standard one (Figure 1). The less favorable outlook for malignant lesions lower in the large intestine (the lower the lesion the poorer the prognosis) is owing at least in part to the inability to remove such wide areas of actually or potentially involved tissue.

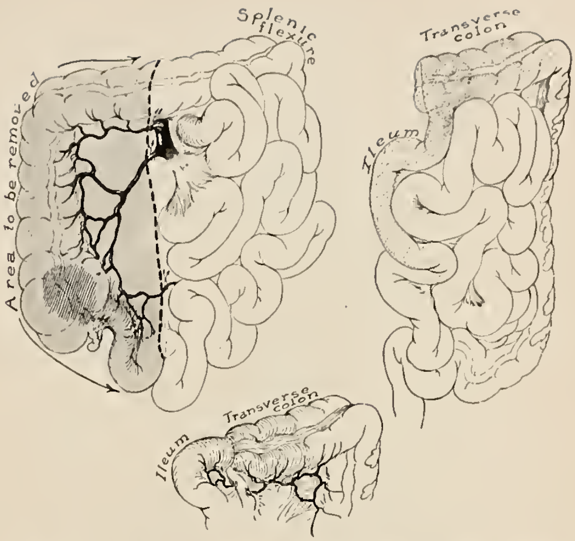

Figure 1.—Wide expanse of lymph node-bearing mesentery removed in the resection of right colon lesions. End-to-end anastomosis can usually be accomplished although when the disparity in diameter of the two segments is considerable an end-to-side ileotransverse colostomy must be used.

Of 13 patients who underwent transverse colectomy,* eight were without lymph node metastases while five had evidence of metastatic deposits at the time of operation. Seven of the 13 patients were alive at the end of five years, and five of the seven patients who had no metastases at the time of operation (Table 6). As is true with regard to other segments of the large intestine, the presence of regional lymph node metastases even in those areas which are amenable to wide mesenteric excision makes for a much poorer outlook (Figure 2).

In this series the number of two-stage procedures in the treatment of lesions of the transverse colon was greater than the number of primary one-stage transverse colectomies (Table 7). The fact that so few of the patients survived the staged resections indicates not a failure of the procedures themselves

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* Fifteen patients with lesions of the transverse colon had right colectomy; thirteen patients with lesions there had left colectomy. The cases are included in the statistics of the right and left colectomy groups respectively.

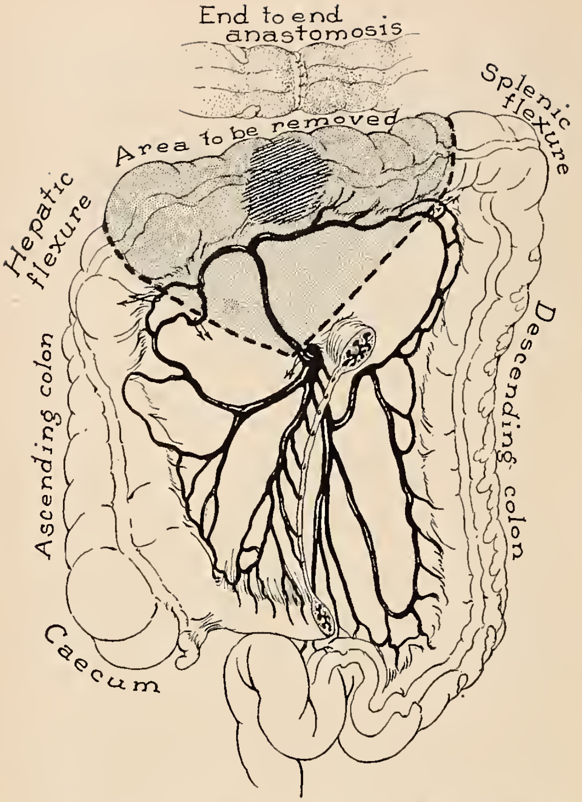

Figure 2.—The ability to mobilize the hepatic and splenic flexures of the colon permits end-to-end anastomosis after wide excision of growths in the transverse colon.

TABLE 8.—*Survival After Left Colectomy in Cases in Which Metastasis Was and Was Not Present*

	Metastases at Operation	No Metastases at Operation	Total
Operations	57	88	145
Living five years	14	59	73
Per cent five-year survival	19.2	80.8	50.4
Deaths within five years	43	29	72
Per cent mortality	60	40	49.6

TABLE 9.—*Procedures Used for Left Colectomy*

Operative Procedure	Number Patients	Living and Well 5 Years or More	Living with Recurrence	Per Cent Living, Well
Segmental resection with or without proximal colostomy	98	48	3	49.0
Mikulicz resection	24	11	1	45.8
Anterior resection	16	7	0	43.8
Abdomino-perineal resection	6	2	0	33.3
Local excision	1	1		100.0
Total	145	69	4	47.6

TABLE 10.—*Survival in Carcinoma of Rectum in Cases in Which Metastasis Was and Was Not Present*

	Metastases at Operation	No Metastases at Operation	Total
Operations	100	178	278
Living five years	20	102	122
Per cent five-year survival	16.5	83.6	43.9
Deaths within five years	79	77	156
Per cent mortality	50.6	49.4	56.1

but rather the advanced state the lesion had reached before operation was done.

It must be acknowledged that although a one-stage primary resection of cancer of the large intestine is the surgical procedure of choice and, where applicable, provides the better prognosis because of the more favorable state of the lesion, in many patients staged procedures are mandatory. This is especially true in the presence of chronic obstruction of the large bowel with its accompanying debilitation, dehydration and generally lowered physiologic state. In the presence of such a multiplicity of variable factors, the ability to adapt a program of surgical treatment to the problem at hand is perhaps the greatest of assets, for that ability will be reflected in morbidity, mortality and prognosis.

There were 145 patients who had resections for lesions of the left colon. The five-year survival rate was considerably higher for patients who did not have metastatic deposits at the time of operation (Table 8).

Various methods of treatment were applied to lesions in the left colon, including the Mikulicz resection, anterior resection, one-stage segmental resection with or without concomitant cecostomy or proximal colostomy, two-stage segmental resection with proximal decompression, abdominoperineal resection and, in one instance, a local excision. The modern concept of definitive resection of lesions of the left colon by so-called segmental excision, either with or without concomitant decompression of the proximal colon by means of cecostomy or transverse colostomy, appears to be justified by favorable results. In the present series the highest survival rate was associated with that procedure (Table 9). However, it must be remembered that other surgical procedures have a definite place in the treatment of selected patients. In general, these procedures were used when the condition of the patient was thought to be sufficiently precarious to indicate the use of an operation of lesser magnitude than primary resection. At the same time, the earlier diagnosis of cancer before obstructive symptoms develop, and the adequate preparation of the large bowel by intestinal antiseptics, have permitted the use of radical wide resection in one stage of malignant lesions of the colon not only with greater frequency but also with greater security.

Carcinoma of the rectum was treated with definitive operation in a group of 278 patients (Table 10) and here again the survival rate was much higher

TABLE 11.—*Procedures Used for Carcinoma of the Rectum*

Operative Procedure	Number Patients	Living and Well 5 Years or More	Living with Recurrence	Per Cent Living, Well
Perineal resection Preliminary colostomy (Lockhart-Mummery)	95	40	1	42.1
One-stage abdomino-perineal	131	45	6	34.3
Anterior resection (Hartman)	19	8	1	42.1
Resection with anastomosis	16	9	0	56.3
Local excision	17	11	1	64.7
Total	278	113	9	40.6

TABLE 12.—*Operative Mortality in Cases in Which Definitive Therapy Was Carried Out*

Site of Lesion	Number Patients	Number Deaths	Mortality Per Cent
Right colon	106	8	7.4
Transverse colon	22	0	0
Left colon	230	15	6.5
Rectum	428	29	6.7
Total	786	52	6.6

for patients who were operated upon before metastatic extension of the lesion to lymph nodes.

In recent years, as mortality rates associated with operations on the rectum have diminished, the use of two-stage resection by colostomy and perineal excision has generally been abandoned at the University of California Hospital in favor of one-stage radical abdominoperineal resection (Table 11). The greatest number of perineal resections (Lockhart-Mummery) in the present series were performed in the earlier years of the study. Such procedures are usually reserved for dealing with low-lying lesions in elderly patients whose general physiologic state prevents the more radical one-stage operation. The fact that the survival rates associated with all the acceptable surgical procedures are comparable would indicate that the operations of lesser magnitude than the one-stage procedure should not be forgotten and should be applied where the general physical condition of the patient suggests the use of such specific surgical measures. In light of the reported results (Table 11) it is difficult to believe that combined abdominoperineal resection of the rectum, although generally accredited as the procedure of choice, will ever completely displace all other procedures in the surgical treatment of rectal cancer.

The highly favorable survival rate associated with local excision of rectal lesions can be explained by the pathologic nature of the lesions. Generally they were small polypoid tumors either with only histologic evidence of malignancy or with limited early invasion of the base of the lesion. It is well known that limited procedures in such circumstances may very well produce favorable results.

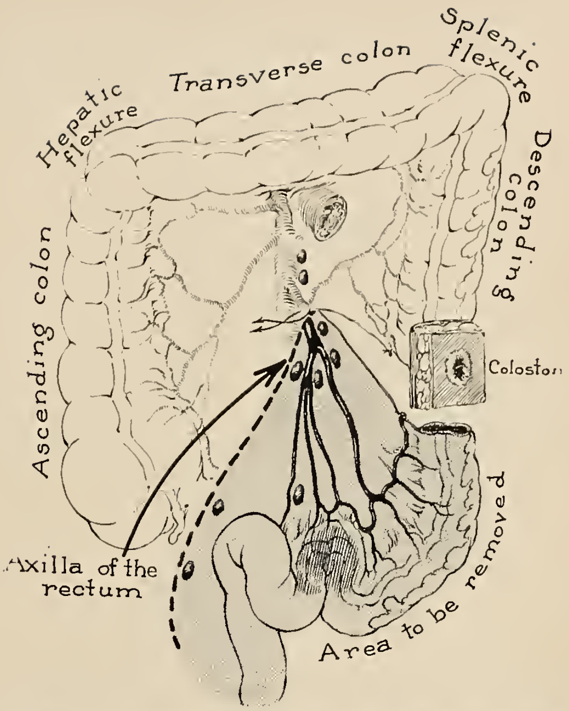

Figure 3.—The removal of the lymph node-bearing area at the root of the inferior mesenteric vessels is essential. This area has been aptly termed "the axilla of the rectum." Nodes in the periaortic chain can also be excised. The generous en bloc removal of tissue accomplished by an abdominoperineal resection is evident.

The use of sphincter-preserving operations, including low-lying anastomosis following resection for carcinoma at or below the rectosigmoid junction, should be condemned. The incidence of local recurrences following such procedures is considerable. Abdominoperineal resection of the rectum for malignant disease of this area is the operation of choice. The wide resection of lymph node-bearing areas obtained by the one-stage radical combined operation is approached by none of the other recognized procedures for rectal cancer. Removal of wide expanses of the sigmoid mesentery and the lymph node-bearing area near the origin of the inferior mesenteric vessels and upward along the aorta is an absolute essential in the correct performance of the procedure. The area at the apex of the sigmoid mesentery at the root of the inferior mesenteric vessels has aptly been called the "axilla of the rectum" (Figure 3). The phrase denotes the necessity of meticulous en bloc dissection of the area similar to that universally accepted as standard procedure in the surgical treatment of carcinoma of the breast.

There is good evidence that the route of lymphatic metastasis from rectal carcinoma is almost entirely

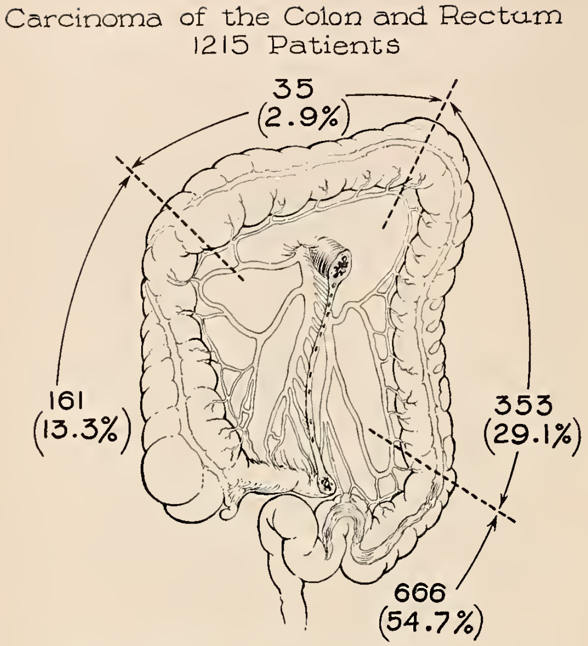

Figure 4.—Malignant lesions arise in the left colon in a high proportion of cases. The great majority of these tumors were located in the sigmoid, rectosigmoid and rectal segments.

upward. Downward spread occurs only when the lesion is far advanced and the upward channels are blocked by malignant cells. The adage that "cancer is a disease that is never treated too early and seldom too radically" applies most certainly in malignant disease of the rectum wherein the most radical procedure is obviously the operation of choice.

Data on operative mortality in the present series (Table 12) indicate that in excision of carcinoma of the large bowel the surgical risk is not much affected by the site of the lesion. The favorable data with regard to lesions of the transverse colon probably reflect the ease with which such lesions can be removed. The extent of the surgical procedure in these instances is generally less than is required for removal of lesions from other portions of the colon.

The incidence of malignant lesions in each of the various segments of the colon in the entire series of 1,215 cases is shown in Figure 4. In 83.8 per cent of the cases the lesions originated in the left colon and rectum. This accords, in general, with corresponding data on other series. The majority of lesions of the left colon were located in the sigmoid segment. The proportion of cases in which resection was possible was about the same regardless of the segment in which the lesion originated (Figure 5).

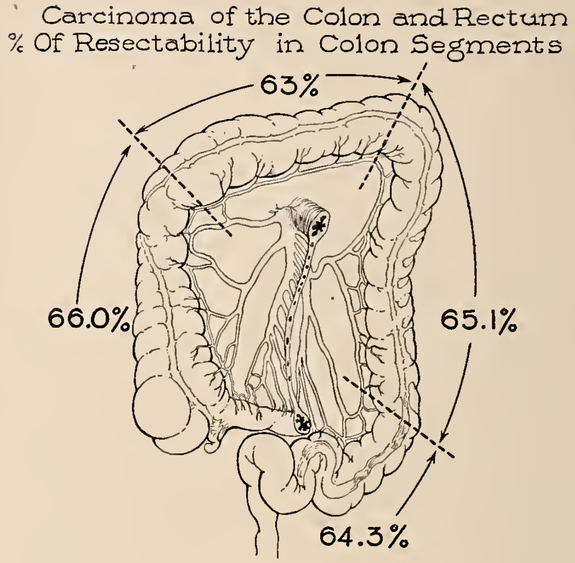
Carcinoma of the Colon and Rectum
% Of Resectability in Colon Segments
63%
66.0%
65.1%
64.3%

Figure 5

A significant fact not brought out in the tables presented is that none of the patients who had purely palliative or supportive treatment (429 patients during the 21-year period) survived five years. The authors believe, however, that in most instances palliative procedures are indicated since they usually provide some measure of comfort to the patient. Even in the presence of hepatic metastases, primary growths should be excised whenever possible, for in many instances the patient benefits.

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Adventures in the Study of Breathing

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• Perfect coordination is required between the amount of air breathed to ventilate the air cells of the lungs and the amount of blood pumped through them by the heart.

Over-ventilation often accompanies severe emotional disturbances with far-reaching effects on the functions of the brain and other organs. Of particular interest are the effects of altering breathing upon angina pectoris.

In conditions with under-ventilation the effects are serious because the carbon dioxide which accumulates acts as a narcotic on the nerve centers which control breathing. If oxygen is given to such patients they may be made much worse and become unconscious. Morphine and other narcotics also make matters worse.

Under-ventilation in patients with over-distention of the air cells of the lungs results in a chronic form of carbon dioxide poisoning, so that the lungs may fail in ventilatory function. Recent work by Whittenberger has shown how to combat this situation by mechanical over-ventilation. As the excess of carbonic acid is removed the narcotic effect of the gas is lessened and the nerve center governing breathing resumes more normal operation under which the effect of oxygen is no longer deleterious.

THE RESPIRATORY FUNCTION taken as a whole involves the blood and its circulation as much as it does the ventilation of the lungs with air. The first two aspects of respiration have received full attention from clinical physiologists, but clinical observation of breathing has received far less than it deserves.

Certain abnormalities of breathing have been matters of commonplace observation for many decades. Thus we are all familiar with the orthopnea of congestive failure and of asthma; with the air hunger of Kussmaul, and the periodic breathing of Cheyne-Stokes. Less well known is the totally irregular breathing of Biot so commonly seen in tuberculous meningitis. How rarely, on the other hand, does one remark upon the exaggerated breathing in states of anxiety, unless it be of such degree as to precipitate tetany. Yet when one considers the vast number of unstable, anxious, insecure people, one realizes that we must be missing the basic mechanism underlying many bizarre symptoms of which they complain.

Many functions in the body are profoundly influenced by any change in the normal alkalinity of the blood plasma and the shifts in electrolyte equilibrium that accompany these changes. The most delicate and immediate adjustments of the reaction of blood plasma are met by the precise control of the rate and depth of breathing. If the volume of air breathed is abnormally augmented in relation to the demands of the metabolism of the moment, a loss of carbon dioxide will occur and immediately the blood reaction will become more alkaline. If the breathing volume is diminished relative to metabolic demand, carbon dioxide will accumulate and the blood will become less alkaline. In both instances the shift in blood reaction is ultimately compensated by shifts of electrolytes from cells to blood and vice versa, and by retention or excretion of base by the kidneys, and by appropriate alterations in blood flow. No doubt minor changes and compensatory adjustments are taking place all the time without production of symptoms. It is also probable that our failure to observe larger alterations in breathing deprives us of the clue to many symptoms accompanying neurotic or psychotic behavior, as well as many other obscure disorders of somatic and visceral functions.

Let us take a common symptom such as the "night cramp" of the legs which wakens from sound sleep. Many remedies for this have been proposed, such as the use of venous stasis by light tourniquets or elevating the head of the bed slightly, or swinging the leg in dependency, or the use of quinine and other drugs. It may surprise you to learn that the simple procedure of holding the breath is frequently successful in relieving a night cramp. If you doubt this, try holding your breath the next time you experience one while sleeping in a Pullman upper berth and other measures for relief are not available.

I would like to direct your attention to another type of cramp, which is felt beneath the sternum during effort and which disappears on cessation of effort. I refer to that cramp called *angina pectoris*, which is intermittent and of short duration and not associated with electrocardiographic abnormality with the subject at rest. My attention was drawn to

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an article by Friedell (in the August 1948 number of *Minnesota Medicine*) who discovered that the pain of angina pectoris was relieved by temporary arrest of breathing such as occurs when one listens intently. In investigating this phenomenon he found that he could teach patients with angina to avoid it by learning to breathe slowly, by voluntary restraint of breathing until this became automatic with them. I have been able to verify Friedell's observations. One patient walking briskly on a cold evening after dinner experienced the pain beneath the sternum. Instead of stopping to rest he simply held his breath for 15 or 20 seconds and the pain under the sternum ceased. Another patient, with mild angina of effort, whose electrocardiogram was normal at rest but became abnormal while walking on a treadmill, could also inhibit the pain by breath-holding. Another patient felt the pain during voluntary exaggeration of the breathing, yet did not feel it when hyperventilated by breathing carbon dioxide. This raised question as to whether angina pectoris could be a manifestation of over-breathing with ensuing hypocapnia and alkalosis.

Let us see how many of the known facts about angina will fit into such a hypothesis. First, it commonly occurs under circumstances of emotional excitement or stress in which over-breathing may occur. Second, its tendency to occur after meals suggests that the "alkaline tide" which occurs during secretion of hydrochloric acid in the stomach would enhance the alkalosis attendant upon over-breathing and loss of carbon dioxide. Third, we have the fact that an injection of epinephrine may induce angina. Of course, the direct effect of epinephrine on the coronary arteries is one of dilatation; but as this drug also produces pronounced stimulation of the breathing so as to bring on alkalosis and tetany at times, one may suppose that the effect on the breathing may be the predominant effect.

Let us examine some of the known facts about the effect of carbon dioxide upon the flow of blood through various organs. Kety and Schmidt[9] have shown that hyperventilation decreases the cerebral flow of blood. DeLalla found that hyperventilation diminished the volume of flow in the finger, as determined with an oncometer. By analogy, might it be that hypocapnia could bring about a diminution in flow of coronary blood by vasoconstriction?

Certain other phenomena of angina pectoris are worthy of consideration in this connection. In patients with aortic insufficiency, angina may occur while the heart is still compensated, but the pain may be entirely lacking when decompensation has occurred. If oxygen lack were the determining factor, one would expect the angina to be worse during congestive failure. Can it be that the disappearance of pain in these circumstances is associated with the hypercapnia of congestive failure? In other conditions in which hypercapnia occurs, such as mitral stenosis and severe emphysema, angina pectoris is of rare occurrence. Such considerations serve to strengthen interest in the hypothesis that over-ventilation, hypocapnia, and alkalosis diminish the coronary flow of blood and predispose to angina pectoris.

In the course of ballistocardiographic studies, Brown[2] regularly observed an abnormally large respiratory variation in the amplitude of the ballistocardiograph in patients with angina pectoris. Such variations may be noted in the absence of angina but are of regular occurrence in the presence of angina. Many patients who had no angina when the respiratory variation of the ballistocardiograph was first observed, developed it later. When this respiratory variation was pronounced, breath-holding was found to result in improvement in the amplitude and definitiveness of the waves of the ballistocardiogram. It was also found that in some cases the ballistocardiograph could be improved and the tolerance for effort increased by the use of abdominal support in the manner described by William J. Kerr a number of years ago. One of the most striking instances of this sort was observed in a patient in whom angina developed following splanchnicectomy. Failures with this method were generally in cases in which there were varicose veins in the legs.

The significance of the foregoing observations is still far from clear. They have stimulated our interest in the widespread system of chemoreceptors, knowledge of which was recently well summarized by Pi-Suñer[7] and by Heymans.[5] Receptors of this type have long been known to exist in the arch of the aorta and in the carotid body, but others are found in the limbs, in the splanchnic areas, and in the entire respiratory tract from nose to alveoli. They send afferent impulses to the main respiratory centers and thus modify their activity. They are generally supposed to be stimulated by oxygen lack and moderate excess of carbon dioxide. They also exert some local circulatory effects; for instance, pulmonary vascular resistance is increased by lack of oxygen and moderate excess of carbon dioxide. It is an attractive hypothesis to suppose that stimuli causing over-ventilation originate in these receptors under circumstances in which the splanchnic and leg circulation is disturbed.

Let us now turn our attention to those phenomena which occur when ventilation is insufficient. One thinks at once of morphine narcosis, or poliomyelitis with involvement of the respiratory muscles. In both conditions severe anoxia may develop in association with carbon dioxide accumulation and acidosis.

Years ago Scott,[8] studying patients with *emphysema* of the lungs, observed that the addition of carbon dioxide to the inspired air did not increase the volume of breathing to the same extent that it does in normal individuals. The full significance of this observation did not become apparent for a long time. I will attempt to sketch briefly the steps by which we have come to understand this phenomenon and the practical applications which we may make of our knowledge of its mechanism.

When a normal man is made anoxic, by ascent to high altitude, or by carbon monoxide poisoning, the effect is to stimulate the breathing to such an extent that carbon dioxide is lost in excess of production, and the blood becomes somewhat more alkaline, since the rate of carbon dioxide loss is greater than the rate at which the kidneys may excrete base in compensation. It appears that oxygen lack may increase sensitivity of the respiratory center to carbon dioxide, provided the respiratory center is not depressed by simultaneous carbon dioxide excess.

In an emphysematous person, owing to various mechanical factors, the elimination of carbon dioxide is less easy and a point is reached at which carbon dioxide may accumulate. This accumulation, if it develops slowly, is compensated by a gradual increase of base in the plasma and lymph, so that commonly in such instances there is an increase in the carbon dioxide combining power of the blood plasma, which may rise to rather high levels before a break in compensation occurs.

Experiments on animals, such as mice, showed that they may become acclimatized to prolonged residence in atmospheres containing excessive amounts of carbon dioxide; however, a point is reached at which carbon dioxide narcosis occurs with carbon dioxide acidosis. The narcotic effect of carbon dioxide diminishes the sensitivity of the respiratory center. When the mice were removed from this atmosphere, tetany usually developed owing to alkalosis, because the stored carbon dioxide was lost more rapidly than the base retained in compensation could be excreted (Seevers,[10] Miller[6]).

A patient with emphysema, who is compensated by an increased carbon dioxide combining power, is in equilibrium as far as the reaction of the blood is concerned. The pH of the plasma may be normal. This equilibrium may be easily upset, however. If one performs a Scott test[8] the addition of carbon dioxide to the inspired air does not increase the ventilation to the degree observed in normal persons, owing to the lessened sensitivity of the respiratory center to this stimulus. The gradual process by which compensation for carbon dioxide excess develops may go on so slowly that neither patient nor physician is concerned over it, until some intervening circumstance precipitates pulmonary failure. One of the commonest of such precipitating events is an attack of acute bronchitis. With fever and cough, cyanosis may become alarming, and orthopnea with asthmatic breathing may be noted, not infrequently with evidence of increased venous pressure and even edema. The patient becomes stuporous and confused. Respiration may become slower and shallower. If, at this point, oxygen is given by mask or nasal catheter, the patient may lapse into coma even though the cyanosis may be relieved. The optic discs may be choked. If oxygen administration is discontinued, partial consciousness may return with cyanosis.

Such a set of circumstances is well illustrated in the following observations in the case of a patient with obstructive emphysema. The hemoglobin content in the blood was 17.24 gm. per 100 cc. and the packed cell volume was 51 per cent of the whole blood. With the patient breathing room air, the oxygen saturation of the arterial blood was 69.9 volumes per cent and the carbon dioxide tension was 72 mm. of mercury. The pH of the blood was 7.3. After the patient had breathed pure oxygen for 15 minutes, cyanosis disappeared, the oxygen saturation reached 98.4 volumes per cent but the carbon dioxide tension rose to 87 mm. of mercury and the pH fell to 7.18, and the patient was totally unresponsive. The spinal fluid pressure while the patient was breathing room air was 160 mm. of water, but after 15 minutes of administration of oxygen by nasal catheter it was 260 mm. of water.

The phenomena in that case are typical of patients with pulmonary failure with hypercapnia, cyanosis and increased intracranial pressure, in which the administration of oxygen relieves the cyanosis but aggravates the carbon dioxide acidosis and narcosis, by further depression of the ventilation.

The correct management of such a situation has recently been pointed out by Boutourline-Young and Whittenberger,[1] who resuscitated such patients by the use of artificial respiration in an "iron lung." By increasing the ventilation of the patients the hypercapnia was relieved, the acidosis was corrected, and the sensitivity of the respiratory center was restored so that it again responded to its normal stimuli. Such treatment had the fortunate result that, once compensation was reestablished, the patients could maintain it for some time.

Application of this life-saving procedure is well illustrated by the case of a 71-year-old woman who had long-standing congestive failure associated with chronic cough and who had been admitted to the hospital on several occasions for chronic bronchitis and bronchopneumonia. Before she was admitted, weakness and mental confusion were noted. At the time of admittance the patient was semicomatose, cyanotic and orthopneic. Rhonchi were heard throughout both lungs. The heart was enlarged and there was pronounced accentuation of the second pulmonic sound. The edge of the liver was palpated three fingers' breadth below the costal margin. Pitting edema was noted in dependent parts. Oxygen saturation of the arterial blood was only 55 per cent, the carbon dioxide tension was 91 mm. of mercury, and the carbon dioxide content was 32.9 millimoles per liter. After two days of administration of oxygen by nasal catheter the condition of the patient worsened. The pH of the arterial blood was 7.08. The patient was put in a Drinker respirator, against which she struggled, and death seemed imminent. However, with the introduction of an airway in the pharynx good ventilation was achieved and within an hour the patient became alert, the pH of the blood rose to 7.37, the arterial pCO_2 fell from 159 mm. to 82 mm. of mercury and the oxygen saturation reached 90 per cent. Two days after the patient was removed from the respirator, relapse occurred and she had to be returned to it. The carbon dioxide tension had risen to 210 mm. of mercury and the pH of the blood had decreased to 7.0. With artificial ventilation the carbon dioxide tension was rapidly reduced, the pH of the blood rose to 7.6 and tetany occurred. Gradually the situation was brought under control, but as difficulty was experienced in adjusting the ventilation, the patient was alternately alert, semi-comatose, alert and delirious. Gradual reduction in carbon dioxide content and tension of the arterial blood was achieved and the blood reaction brought into the range of normal. Penicillin was given throughout in order to control infection. The patient remained in the respirator for eleven days before the tension of gases in the blood and electrolyte content became normal.

In lung volume determinations a reduction in all partitions was noted. Cardiac catheterization showed the cardiac output to be normal. The mean pulmonary arterial pressure remained elevated at 26 mm. of mercury. The patient was discharged from the hospital and remained well for several months during which the arterial oxygen saturation was maintained at 89 per cent and the carbon dioxide tension ranged between 54 and 42 mm. of mercury.

The experiences with these two patients indicate that there are situations of everyday occurrence in practice which render the indiscriminate use of oxygen in high concentration somewhat hazardous. The instances in which it is disadvantageous to administer oxygen are those in which the compensation for chronic carbon dioxide retention has begun to fail and the respiratory center has diminished sensitivity to stimulation by inspired carbon dioxide, as determined by the Scott[8] test.

If one is confronted by a cyanotic patient in an emergency such that the facts concerning the tension and content of carbon dioxide in the blood are unknown, one should be quite alert in observing the effects of relieving the cyanosis by administration of oxygen. If clearing of the cyanosis is accompanied by a lapse into a deeper state of unconsciousness, it is indicative of primary failure of the ventilatory mechanism rather than of primary failure of the circulation. Continuation of the use of oxygen in such instances may be lethal, and further depression of ventilation by narcotics of the opium group should be carefully avoided. The aim of treatment should be first to eliminate the excessive carbon dioxide by increasing the ventilation by artificial respiration. The administration of oxygen should be undertaken gradually *after* there is evidence of improved sensitivity of the respiratory center.

When emphysematous patients with chronic pulmonary disease are under observation, the following phenomena may herald pulmonary or ventilatory insufficiency: (1) increasing elevation of the carbon dioxide combining power of the blood; progressive increase in the arterial carbon dioxide tension; (2) failure of carbon dioxide added to the inspired air to produce normal increase in pulmonary ventilation; (3) mental confusion deepening into stupor or into coma when cyanosis is relieved by administration of oxygen; (4) acceleration of circulation time before signs of congestive failure appear, or normal values for circulation time in patients with congestive failure.

It will be better for us to use the term *pulmonary insufficiency* or *ventilatory insufficiency* rather than *cor pulmonale* or *pulmonary heart disease.* If circulatory failure is mistaken for ventilatory failure, valuable time may be lost and harm done by using digitalis, morphine, and oxygen when the patient most urgently needs artificial increase in ventilation, aided by aminophyllin or bronchodilator drugs.

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Phenylbutazone (Butazolidin) and Butapyrin®

A Study of Clinical Effects in Arthritis and Gout

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• *A clinical evaluation of phenylbutazone and Butapyrin® (a mixture of phenylbutazone and aminopyrine) was made in 409 patients who had a variety of rheumatic diseases. Preliminary European claims were substantiated.*

In gout a specific favorable effect was brought about by phenylbutazone alone.

Effects equivalent to the previously reported favorable response to Butapyrin (Irgapyrin) were observed when its constituent phenylbutazone was used alone. The drug had a suppressive effect in a high percentage of patients with rheumatoid arthritis, ankylosing spondylitis, arthritis with psoriasis and mixed arthritis (rheumatoid arthritis plus osteoarthritis). Favorable effect in peritendinitis of the shoulders, osteoporosis of the spine and acute lumbosacral strain also was noted.

Toxicity resulted in discontinuance of medication in 10 per cent of patients with each drug. Manifestations of toxicity generally included fluid retention, nausea and rash, but there were several instances of transitory leukopenia and anemia. There was one instance of agranulocytosis with Butapyrin but none with phenylbutazone.[†] *Aggravation of peptic ulcer occurred in ten patients with hemorrhage in two. Generally the toxicity was of a low order as compared with that of other drugs having an antirheumatic effect.*

[†] See Addendum.

PHENYLBUTAZONE (butazolidin or 3, 5-dioxo-1, 2-diphenyl-4-n-butylpyrazolidine, a pyrazole derivative) was synthesized by chemists of the J. R. Geigy Company of Basle.* Its first clinical application was in mixture in equal parts with aminopyrine (Figure 1). This mixture is known as Irgapyrin® in Europe and as Butapyrin® in this country. In extensive European clinical trials in rheumatic diseases, with favorable results, the mixture was given parenterally.[1] Since aminopyrine, although widely used clinically for many years, has no known antirheumatic effect, it was felt desirable to evaluate the constituent compound, phenylbutazone, alone. At the request of the authors this substance was made available for parenteral and oral use.. The original work using the mixture resulted from the discovery that phenylbutazone promoted solubility of the relatively insoluble aminopyrine. Preliminary clinical trials by the authors confirmed in a general way the claims of the European investigators. Further, since it was observed that Butapyrin apparently had specific effect in acute gout, repetition of the work using phenylbutazone alone seemed to be indicated. Another purpose was to reevaluate the original claims in accord with the diagnostic and therapeutic criteria of the American Rheumatism Association, so that comparison of the antirheumatic activity of these substances could be made with that of other agents currently used in treatment of rheumatic diseases. Since there was no accepted system of classification and rating for the therapeutic effect of medications in gout, it was necessary to devise and employ such a system, which is described below. In a preliminary report[4] it was noted that phenylbutazone used alone had the same specific effect in gout that had previously been observed with Butapyrin, and that there was also an antirheumatic effect beyond simple analgesia following its use.

PHARMACOLOGY

Pharmacological investigation by Wilhelmi indicated that phenylbutazone raises the pain threshold to electrical stimulation of pulp of incisor teeth in rabbits, that it has an antipyretic effect in rabbits infected with *Escherichia coli,* and that it delays the development of erythema on the skin of rabbits exposed to ultraviolet irradiation.[1]

Phenylbutazone was found to be more effective than aminopyrine or Butapyrin in inhibiting localized edema and increased capillary permeability pro-

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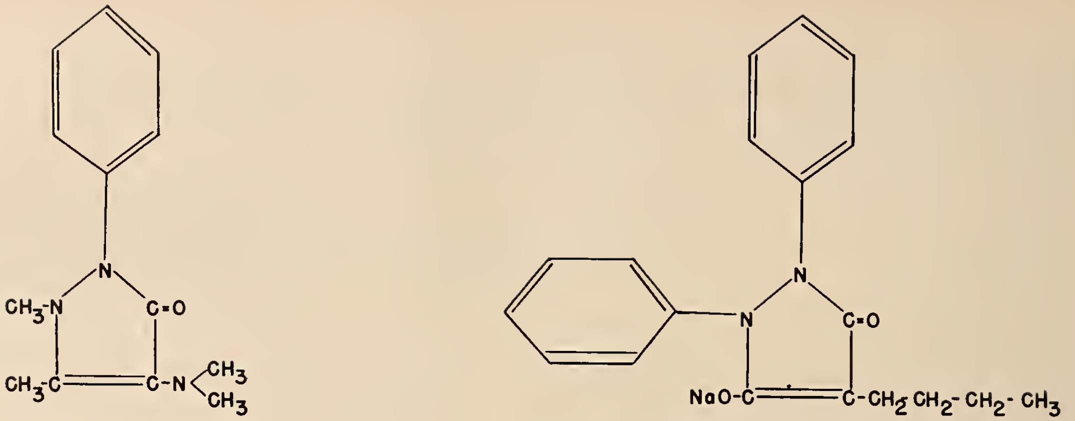
* Phenylbutazone and Butapyrin were supplied by Geigy Pharmaceuticals, 220 Church Street, New York, N. Y.



4-DIMETHYLAMINO-1-PHENYL-2,3-
DIMETHYL-PYRAZOLON
(DIMETHYLAMINOANTIPYRIN = AMINOPYRINE)

3,5-DIOXO-1,2-DIPHENYL-4-N-BUTYL-PYRAZOLIDIN
SODIUM (G 13871)

Figure 1.—Structural Formulae of Aminopyrine and Phenylbutazone (Butazolidin).

duced by the application of irritants such as croton oil.[1] Studying the blood concentrations, Pulver[1] found that phenylbutazone is excreted at a slower rate than is aminopyrine. In the mouse and rat, the LD_{50} of phenylbutazone is lower than that of either aminopyrine or of the mixture Butapyrin. In large doses, these compounds produce tonic-clonic convulsions. In rats, the daily oral administration of phenylbutazone, 50 mg. per kilogram of body weight, was found to produce no apparent chronic toxicity. None of these compounds stimulates the adrenal cortex directly in hypophysectomized rats;[4] whereas, aminopyrine and Butapyrin appear to stimulate the anterior pituitary to release corticotropin. Phenylbutazone alone had no such effect. In experiments by the authors, none of the compounds was capable of maintaining the adrenal glands of hypophysectomized rats. In tissue respiration studies, it was observed that phenylbutazone depressed the oxygen consumption of rat cerebral cortex. The effect of these compounds on rat polyarthritis produced by pleuropneumonia-like organisms also was studied. While aminopyrine was found to cause a slight reduction in the extent of this specific experimental arthritis as compared with the controls, phenylbutazone produced a slight aggravation of the arthritis, as had corticotropin (ACTH), cortisone acetate and Compound F acetate.[5] No significant changes were noted in the cell content of the blood of animals that were given these pyrazoles for long periods.

CLINICAL EVALUATION

Clinical study of 409 patients who received Butapyrin and/or phenylbutazone was carried out. Butapyrin was administered orally in coated tablets containing 250 mg. of the mixture, and intramuscularly as a 30 per cent solution containing equal parts of aminopyrine and the sodium salt of butazolidin. Phenylbutazone was available in coated tablets containing either 125 or 200 mg., and in 20 per cent solution of the sodium salt. The range of the oral dosage was approximately the same for both substances, varying between 250 and 1,500 mg. daily. In most instances intramuscular dosage did not exceed a daily total of 1.5 gm., although occasionally twice that amount was given. Parenteral administration was reserved for acute situations, in which rapid symptomatic relief was desirable. Intravenous administration was not employed, although European investigators have reported intravenous use of Butapyrin. The period of clinical observation for Butapyrin was 19 months. During the last ten months of the period of this study, however, phenylbutazone was used almost exclusively. It was possible to compare the effect of the two substances in many patients with chronic or recurrent disease; and occasionally placebos were substituted. Placebos were found to be universally ineffective.

Gout: In Table 1 the therapeutic response of 65 patients to Butapyrin and of 74 patients to phenylbutazone is presented. The system for rating this response and classifying the patients is described in that table. Criteria for the diagnosis of gout were: History of acute painful joint swelling of rapid onset followed by complete remission with tendency to recurrence following various kinds of stress; the presence of hyperuricemia; characteristic roentgenographic "punched-out" areas in the subjacent bony cortex of the affected articulations; increased urinary excretion or uric acid; presence of tophi; and characteristic response to colchicine. Obviously since some of the patients were in the pretophaceous stage, not all of the criteria were fulfilled in every case. It is perhaps noteworthy that among the total

TABLE 1.—*Therapeutic Response of Gout to Butapyrin (BP) and Phenylbutazone (PB)*

*Stage	Number of Patients with Various Grades of Response† I BP	I PB	II BP	II PB	III BP	III PB	IV BP	IV PB
I	17	10	6	5	1	1	0	0
II	13	25	16	24	11	9	1	0
Totals	30	35	22	29	12	10	1	0

*Stage I. Acute gout, with asymptomatic periods between exacerbations. Stage II. Acute gout superimposed upon chronic gouty arthritis.

†Therapeutic Response: Grade I. Complete remission in 48 hours or less. Grade II. Major improvement, indicating rapid decrease of signs and symptoms within 48 hours, but with slight persistence up to seven days following initial therapy. Grade III. Minor improvement with analgesia and decreased swelling, but not complete remission, in spite of continued therapy. Grade IV. No effect.

TABLE 2.—*Therapeutic Response of Rheumatoid Arthritis to Butapyrin and Phenylbutazone*

Stage	Class	Grade of Response — Number of Patients I BP	I PB	II BP	II PB	III BP	III PB	IV BP	IV PB
I	I	0	1	0	0	0	0	0	0
	II	1	0	1	5	2	4	0	2
	III	0	1	0	1	0	0	0	0
	IV	0	0	1	0	0	0	0	0
II	I	0	1	0	0	0	0	0	0
	II	3	1	8	12	5	4	0	1
	III	1	0	7	6	2	1	2	0
III	II	1	1	1	0	1	0	2	1
	III	0	0	3	4	1	2	2	0
IV	II	1	0	2	3	2	2	0	1
	III	0	0	3	4	6	4	4	1
	IV	0	0	0	0	2	5	2	0
Totals		7	5	26	35	21	22	12	6

According to the criteria of the American Rheumatism Association[2]:

Stage: Extent of rheumatoid progression, objective changes increasing from mild (I) to severe (IV).

Class: Functional capacity of the patient, ranging from complete activity (I) to incapacitation (IV).

Grade: Response of rheumatoid activity to therapy, ranging from complete remission (I) to complete lack of effect (IV).

BP = Butapyrin, 66 patients.

PB = Phenylbutazone, 68 patients.

of 107 gouty patients in this series 27 were females, all save one of them postmenopausal.

All patients treated with phenylbutazone had some degree of clinical response. Approximately half of them had complete clinical remission in 48 hours or less, and 84 per cent became asymptomatic within one week after institution of therapy. With Butapyrin the results were of the same order; 80 per cent of the patients had a similar degree of therapeutic response. One of the 65 patients treated with Butapyrin had no improvement. He had moderately severe diabetes in addition to gout, and later he had minor improvement when treated with phenylbutazone.

Although the uric acid values in the serum promptly decreased following the use of either Butapyrin or phenylbutazone, there was no consistent increase in the urinary excretion of uric acid coincident with decrease in serum uric acid—a phenomenon which deserves further study.

Of the 107 gouty patients, 32 received both Butapyrin and phenylbutazone at different times. Twenty-two had equivalent results with either drug, four responded better to Butapyrin, and six to phenylbutazone. In three patients who obtained partial relief from the pyrazoles, cortisone and/or corticotropin were superior. All except one of 68 patients who previously received colchicine felt better when given either Butapyrin or phenylbutazone than they had when treated with colchicine and/or salicylates. In no instance was the gout apparently aggravated by the pyrazoles. Treatment was continued generally for one week following subsidence of symptoms in acute exacerbations, but in 36 patients with chronic gouty arthritis maintenance therapy was employed. Twenty-seven of the 36 had decreased frequency of acute attacks as well as amelioration of the chronic gouty arthritis. Acute exacerbations in patients with chronic disease responded to increased dosage. The maintenance dose varied from 200 to 800 mg. daily.

Rheumatoid Arthritis: Among 97 patients treated (Table 2), 37 received both Butapyrin and phenylbutazone. Thirty of the 37 had equivalent response to both drugs, four had better results from Butapyrin and three from phenylbutazone. Twelve of the 66 patients treated with Butapyrin and six of the 68 patients treated with phenylbutazone had no therapeutic response; but none was made worse. On the other hand, 33 of 66 treated with Butapyrin and 40 of 68 given phenylbutazone therapy had major improvement which persisted as long as the medication was continued. Within five days after discontinuance of therapy, symptoms returned in all instances. One-third of the patients in both groups had only minor improvement, chiefly characterized by analgesia. Fifteen patients had a greater degree of improvement when treated with cortisone and/or corticotropin than when either Butapyrin or phenylbutazone therapy was given, while five others were equally comfortable whether treated with the hormones or the pyrazoles. While in no case was Butapyrin or phenylbutazone superior to cortisone or corticotropin, the incidence of undesirable side effects was greater with the hormones. In several patients cortisone acetate and phenylbutazone were used alternately, each for a period of two weeks, with satisfactory results. In these instances patients generally felt stronger while taking cortisone acetate.

Ankylosing Spondylitis (rheumatoid arthritis of the spine): Thirty-five patients were treated (Table 3). Eight of the twelve patients who received both Butapyrin and phenylbutazone had equivalent response to both drugs, three had better response to phenylbutazone, and one to Butapyrin. Major improvement was noted in 15 of 26 patients treated with Butapyrin and in 17 of 21 who were given

TABLE 3.—*Therapeutic Response of Ankylosing Spondylitis to Butapyrin and Phenylbutazone*

		Grade of Response — Number of Patients							
		I		II		III		IV	
Stage	Class	BP	PB	BP	PB	BP	PB	BP	PB
II	II	1	0	2	4	3	1	3	0
	III	0	0	0	3	2	0	0	0
III	II	0	0	0	1	0	1	2	0
	III	0	1	3	1	0	0	0	0
IV	II	0	0	3	1	0	1	1	0
	III	1	0	4	7	0	0	0	0
	IV	0	0	1	0	0	0	0	0
Totals		2	1	13	17	5	3	6	0

For interpretation, see Table 2.
BP = Butapyrin, 26 patients.
PB = Phenylbutazone, 21 patients.

TABLE 4.—*Therapeutic Response of Mixed Rheumatoid and Osteoarthritis to Butapyrin and Phenylbutazone*

		Grade of Response — Number of Patients							
		I		II		III		IV	
Stage	Class	BP	PB	BP	PB	BP	PB	BP	PB
II	I	0	0	1	0	0	0	0	0
	II	0	0	4	12	3	9	3	7
	III	0	0	1	3	0	1	0	2
III	II	0	0	0	1	0	0	0	1
	III	0	0	0	1	1	0	0	0
IV	II	0	0	0	1	0	0	0	0
	III	0	0	0	0	0	0	1	0
Totals		0	0	6	18	4	10	4	10

For interpretation, see Table 2.
BP = Butapyrin, 14 patients.
PB = Phenylbutazone, 38 patients.

TABLE 5.—*Therapeutic Response of Arthritis with Psoriasis to Butapyrin and Phenylbutazone*

		Grade of Response — Number of Patients							
		I		II		III		IV	
Stage	Class	BP	PB	BP	PB	BP	PB	BP	PB
II	II	0	0	1	0	4	2	0	1
	III	0	0	2	2	1	1	0	0
III	II	0	0	0	0	1	1	0	0
IV	II	0	0	1	3	1	0	0	0
Totals		0	0	4	5	7	4	0	1

For interpretation, see Table 2.
BP = Butapyrin, 11 patients.
PB = Phenylbutazone, 10 patients.

phenylbutazone. Six of the patients who received Butapyrin had no response to it. Phenylbutazone afforded some measure of improvement in all cases in which it was used. Twenty of the 35 patients received both x-ray therapy and the drugs. Five of them had greater response to irradiation than to either drug, but in nine cases the drugs were superior and in six others there was a similar degree of improvement. In two cases cortisone was used and the response was inferior to that of the pyrazoles, since one of the patients became psychotic during cortisone therapy and the other suffered activation of quiescent pulmonary tuberculosis.

TABLE 6.—*Therapeutic Response of Miscellaneous Disorders to Butapyrin and Phenylbutazone*

	Degree of Improvement — Number of Patients					
	Major		Minor		None	
Disorder	BP	PB	BP	PB	BP	PB
Peritendinitis, shoulder	10	5	6	2	3	0
Osteoarthritis	4	10	3	2	6	6
Osteoporosis	3	9	1	3	0	2
Malum coxae senilis	1	1	6	3	0	0
Total	18	25	16	10	9	8

BP = Butapyrin, 43 patients.
PB = Phenylbutazone, 43 patients.

Mixed Rheumatoid and Osteoarthritis: Of 45 patients (Table 4) with concomitant rheumatoid and osteoarthritis (degenerative joint disease), eight received both Butapyrin and phenylbutazone. Butapyrin was superior in three cases, phenylbutazone in three, and in two the response was similar. The improvement was less in the group of patients with mixed disease than in the group with rheumatoid arthritis only; none of the patients had Grade I therapeutic response and more than half of them had only minor improvement or none at all.

Psoriasis with Arthritis: Thirteen patients with psoriasis and arthritis were treated and eight received both drugs (Table 5). Seven of the eight had equivalent response to both drugs, while one had better response to phenylbutazone. Although none of the patients had Grade I response with either drug, all of those treated with Butapyrin were benefited, and all but one of those given phenylbutazone had some measure of symptomatic relief. Dermal lesions of seven of the patients cleared during therapy although no local medication was used.

Miscellaneous Disorders (Table 6): Twenty-two patients with acute or subacute peritendinitis of the shoulders were treated. Four of them received both agents with equivalent response. Sixteen of 19 treated with Butapyrin and all of seven treated with phenylbutazone made a good therapeutic response, which was in most instances complete within two days. In all cases medication was withdrawn without recurrence of symptoms.

Of 29 osteoarthritic patients treated, two received both agents with similar degree of improvement. Twelve of 18 who were treated with phenylbutazone had some measure of relief, as did seven of 13 who were given Butapyrin.

Fourteen patients with postmenopausal or presenile osteoporosis of the spine were treated. Four who were treated first with one of the drugs then the other had equivalent relief from both. Four patients treated with Butapyrin and 12 of 14 treated with phenylbutazone, quickly had some relief of pain and spasm in the back while appropriate hormone therapy was being instituted.

Three of eight patients with *malum coxae senilis* had similar response to both drugs and all had

TABLE 7.—*Toxic Manifestations of Butapyrin*

Disorder	No. Patients Treated	Manifestations											
		Rash	Edema	Nausea	Ulcer Aggravation	Anemia	Leukopenia	Agranulocytosis	Stomatitis	Vertigo	Nervousness	No. Patients showing toxicity	Drug Discontinued due to toxicity
Gout	64	....	5	5	....	....	....	....	....	....	....	9	2
Rheumatoid arthritis	66	3	6	4	1	3	2	....	....	....	....	14	8
Ankylosing spondylitis	26	....	2	2	1	....	....	....	....	....	....	5	2
Mixed arthritis	14	....	3	1	1	....	....	1	....	....	....	6	4
Psoriasis with arthritis	11	1	....	1	1	....	....	....	....	....	....	2	1
Osteoarthritis	13	....	....	1	....	....	....	....	....	1	....	2	0
Malum coxae senilis	7	....	2	....	1	....	....	....	....	1	....	4	0
Osteoporosis	4	....	2	....	....	....	....	....	....	....	....	2	0
Peritendinitis, shoulder	19	1	1	2	2	....	....	....	....	....	....	5	4
Peripheral vascular disease	5	....	....	....	....	....	....	....	....	....	....	0	0
Miscellaneous	18	1	2	2	....	....	....	....	....	....	....	4	3
Totals	247	6	23	18	7	3	2	1	0	2	0	53	24

some relief from pain and stiffness. but in no instance was there more than minor objective improvement.

Therapeutic trials were made in peripheral vascular disorders, since it was noted, in treating arthritic patients, that warming of the extremities often occurred within a few minutes after parenteral administration of either agent. One patient with severe Raynaud's disease had complete relief of symptoms, but owing to fluid retention she was unable to tolerate prolonged medication. One patient with thromboangiitis obliterans had pronounced relief and another had minor improvement. Both were able to walk greater distances without claudication.

Four patients with advanced arteriosclerosis of the leg vessels were given satisfactory analgesia; but no improvement in oscillometric readings was observed.

Three patients with multiple sclerosis experienced no relief during pyrazole therapy. Three patients with disseminated lupus erythematosus and six with idiopathic migraine headache were unrelieved. Pain associated with acromegaly was not altered in one patient. In another, generalized atopic dermatitis was aggravated by Butapyrin. Three of four patients with acute myofibrositis had relief of pain and spasm within several hours of parenteral administration of Butapyrin or phenylbutazone.

Five of nine patients with nerve root pain from herniation of nucleus pulposus received satisfactory temporary analgesia, but four were totally unrelieved. Two children with juvenile rheumatoid arthritis improved when treated with phenylbutazone (one had Grade II and the other Grade III therapeutic response).

CLINICAL TOXICITY

Of 247 patients treated with Butapyrin, 53 had toxic side effects, which in 24 instances (10 per cent) were serious enough to warrant discontinuance of medication (Table 7). There were 62 toxic manifestations observed among the 53 patients. Most frequently seen were edema and nausea. There was one case of agranulocytosis with recovery after discontinuance of medication. Two instances of transitory leukopenia (leukocytes fewer than 3,000 per cubic millimeter) and three cases of anemia (hemoglobin less than 10 gm. per 100 cc.) were observed. Morbilliform rash occurred in six patients and aggravation of peptic ulcer in seven others.

There were 84 toxic manifestations in 64 of 278 patients who received phenylbutazone; and in 28 cases therapy was discontinued because of toxicity (Table 8). The incidence of rash was 4.3 per cent and, as with Butapyrin, edema and nausea were the most common toxic effects. There were two instances of purpura and three of stomatitis but none of agranulocytosis.

The edema occurring during the use of either drug subsided within three to five days after discontinuance of therapy, or with institution of sodium restriction. Mercurial diuretics were generally ineffective in ameliorating the fluid retention produced by these pyrazoles.

The nausea was usually associated with oral administration and often could be reduced or avoided by the concurrent use of antacids. However. as nausea was observed during parenteral administration in several instances, a central nauseant effect may be involved.

The incidence of toxic reactions appeared to be lowest among the patients with gout and highest among those with mixed rheumatoid and osteoarthritis.

Although the incidence of hematopoietic damage appeared to be low and the changes transitory, the blood was examined at weekly or bi-weekly intervals in most instances.

There was no evidence of altered renal function and in no case was coexisting diabetes demonstrably intensified.

TABLE 8.—*Toxic Manifestations of Phenylbutazone*

Disorder	No. Patients Treated	Manifestations												
		Rash	Edema	Nausea	Ulcer	Anemia	Leukopenia	Stomatitis	Vertigo	Nervousness	Purpura	G.I. Hemorrhage	No. Patients showing toxicity	Drug discontinued due to toxicity
Gout	76	2	4	6	0	0	0	1	....	1	....	....	9	4
Rheumatoid arthritis	68	4	4	10	0	1	1	1	1	....	....	....	15	4
Ankylosing spondylitis	21	1	1	2	....	....	....	....	....	1	....	....	4	1
Mixed arthritis	38	2	6	4	1	....	1	1	....	....	1	....	13	8
Psoriasis with arthritis	10	....	....	2	....	....	....	....	....	....	....	1	2	1
Osteoarthritis	16	1	1	6	0	....	....	....	0	....	1	....	8	4
Malum coxae senilis	4	....	2	....	1	....	....	....	....	....	....	1	3	0
Osteoporosis	14	....	2	....	....	1	....	....	....	....	...	....	3	0
Peritendinitis, shoulder	7	....	2	1	1	....	....	....	....	....	....	....	3	3
Peripheral vascular disease	4	....	1	....	....	....	....	....	....	....	....	....	1	1
Miscellaneous	18	2	1	....	....	....	....	....	....	....	....	....	3	2
Totals	278	12	24	31	3	2	2	3	1	2	2	2	64	28

Since these drugs possess antipyretic and analgesic properties, patients in whom respiratory infections developed during therapy often experienced only mild weakness and diaphoresis rather than the usual more severe symptom complexes.

Sulfobromphthalein tests of liver function and determinations of platelet content of the blood were carried out during pyrazole therapy in twelve cases. There was no departure from normal in either respect. Although no studies of blood volume were done, the rapid development of edema may have resulted in transitory reduction of hemoglobin values due to hemodilution.

DISCUSSION

Although the original European clinical studies were made with a mixture, Butapyrin (phenylbutazone plus aminopyrine), subsequent observations by the authors established the important therapeutic effect of phenylbutazone used alone. The present comparative study shows that there is no significant difference in the therapeutic response to Butapyrin and phenylbutazone in gout and a variety of rheumatic diseases.

Phenylbutazone effects the same degree of beneficial action as Butapyrin in gout.[2] Although aminopyrine once was widely used clinically no reference could be found in the available literature concerning its use in gout. The pronounced favorable response of gout to phenylbutazone exceeded that to colchicine in all the cases where comparison was made by the authors. Although at present there is no evidence to indicate that phenylbutazone promotes the excretion of urates, the uniformly striking reduction of uric acid content in the blood would suggest that the action of the drug in gout is indeed specifically concerned with the metabolism of urates.

The antirheumatic effect of these agents in rheumatoid arthritis, in psoriasis with arthritis, in mixed arthritis, and in ankylosing spondylitis, *depends on continued administration* of the medication. In ankylosing spondylitis the therapeutic response is perhaps slightly better than in rheumatoid arthritis and in the other related diseases previously mentioned. This appears to be particularly true with regard to phenylbutazone, which had beneficial effect of some degree in all cases of ankylosing spondylitis.

The temporary use of these agents in osteoporosis of the spine, peritendinitis of the shoulder, and acute fibromyositis is apparently of considerable value.

The most important manifestations of the toxicity of the two agents were fluid retention, nausea, rash, and aggravation of peptic ulcer. Therapy had to be discontinued in only 10 per cent of patients with each preparation. However, in gout, where the greatest measure of benefit was observed, it was necessary to discontinue therapy in only 3 per cent of patients receiving Butapyrin and 5 per cent of those treated with phenylbutazone.

Although there was one case of agranulocytosis owing to Butapyrin, the patient recovered. The occurrence of two instances of leukopenia and three of anemia in the group receiving Butapyrin included one male with monocytic leukemia who had both leukopenia and anemia. Another male who later died of lymphosarcoma had anemia while receiving Butapyrin, but this could have been the result of pulmonary hemorrhage. Among patients treated with phenylbutazone alone, two transitory instances of leukopenia were observed and there were two patients with anemia, one of whom was the previously mentioned patient who had monocytic leukemia. The phenylbutazone was continued in these patients. One received a transfusion of whole blood and all three received supplemental liver extract and iron by mouth. The blood returned to normal in each instance. The occurrence of gastrointestinal hemorrhage in two patients during phenylbutazone therapy was presumably owing to aggravation of peptic ulcer. One of these patients successfully resumed the medication by mouth and the other intramuscularly together with appropriate ulcer therapy.

ADDENDUM

Since the time of presentation of this paper two cases of agranulocytosis have occurred among patients treated with phenylbutazone. There were two other cases of agranulocytosis among a group of patients treated with phenylbutazone and acetosulfone concurrently. After recovery from agranulocytosis both patients who received acetosulfone and one of the other two were given phenylbutazone again, without ill effect. This suggests that the depression of the granulocytes was owing, not to hypersensitivity, but to direct depression. Therefore, when phenylbutazone is used concurrently with other drugs that might cause bone marrow depression, extreme caution is necessary.

ACKNOWLEDGMENT

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Third Degree Laceration at Delivery

Etiological Considerations, and a Technique for Repair

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• In a series of 14,080 cases in which either median or mediolateral episiotomy was used to facilitate delivery, third degree extension occurred in 75 cases (0.5 per cent). In related data extension of laceration was observed to occur in an inordinately high proportion of cases in association with use of forceps, greater than normal anterior pelvic depth, delivery of a large baby, primiparity, abnormal position and presentation, use of median incision (although extension also occurred in some cases in which mediolateral episiotomy was done), and hyperflexion and extreme abduction of the thighs.

The method of immediate postpartum repair employed was associated with a minimal amount of postpartum discomfort, and late complications were almost nil.

RECENT REPORTS indicate a gradual but positive trend in this country toward routine employment of median episiotomy in vaginal delivery. Eastman[1] stated that median episiotomy is a satisfactory procedure in nine out of ten deliveries. Kaltreider and Dixon[2] after extensive review of cases concluded that median episiotomy is suitable in 93 per cent of deliveries. It may be anticipated that with such teaching now appearing in standard texts, median incision will come to be used almost exclusively in obstetric care. As it is inevitable that third degree laceration will occasionally occur in cases in which median episiotomy is carried out, consideration of the causes and the repair of such lesions comes to the fore.

Study was made of 75 cases of third degree laceration that occurred in a total of 14,080 patients in whom episiotomy (either median or mediolateral) was done during the period January 1, 1946, to January 1, 1951 (see Table 1). The incidence of third degree laceration was 0.5 per cent. The attending physicians were a mixed group—residents, nonspecialists and specialists.

Seven of the 75 patients were between 15 and 20 years of age, 48 were between 20 and 30, and 20 were between 30 and 40. As fecundity is usually associated with the third and fourth decades of life, the age of the patient did not appear to be an important factor relative to the occurrence of third degree laceration.

Sixty-one of the patients were primiparae and 14 multiparae, as would be expected in light of the lesser distensibility of pelvic tissues in primiparae.

The average duration of labor was ten hours, the longest 27 hours, and the shortest 31 minutes. Although it is logical to expect rectal injuries in cases of prolonged labor, which often causes edema and friability of tissues and is associated with difficult delivery, the incidence of lacerations in this series cannot be explained on that basis, in view of the relatively short average period of labor.

TABLE 1.—*Median and mediolateral episiotomy in a series of 14,080 cases*

Episiotomy	No.	Per cent of series
Median	6,577	47
Mediolateral	7,503	53
Total	14,080	100

Note: Third degree extension occurred in 75 cases (0.5 per cent).

TABLE 2.—*Fetal position*

Occiput anterior		62
Occiput posterior:		
Kielland rotation	3	
Manual rotation	3	
Occiput posterior as such	2	
Total occiput-posterior		8
Breech presentation		5

The occiput posterior is said to occur in 20 per cent of all deliveries and breech presentation in 4 per cent. When the incidence of third degree extension associated with these positions in this series (Table 2) is viewed in light of the fact that third degree laceration occurred in only 0.5 per cent of all cases in the series, it is obvious that fetal position was an etiologic factor.

As forceps were used in 62 of the 75 cases (a high proportion) the use of forceps must be indicted as an etiological factor in third degree lacerations.

While it was to be expected that extension of laceration would occur relatively often when median episiotomy was carried out, there was also a fairly high incidence of third degree extension associated

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with mediolateral episiotomy, a procedure used to avoid rectal injury. In 59 of the 75 cases median episiotomy was used, in 12 mediolateral. Episiotomy was not done in four cases in which third degree laceration occurred.

TABLE 3.—*Weight of babies in cases of rectal laceration in present series, as compared with general average incidence of babies of each size*

Grams	Associated with rectal laceration (per cent)	Average clinic incidence (per cent)
2268-2722	7.0	6.4
2722-3175	17.3	16.3
3175-3629	33.2	44.7
3629-4082	22.6	30.6
4082-4536	17.3	1.6
4536-4990	2.6	.4

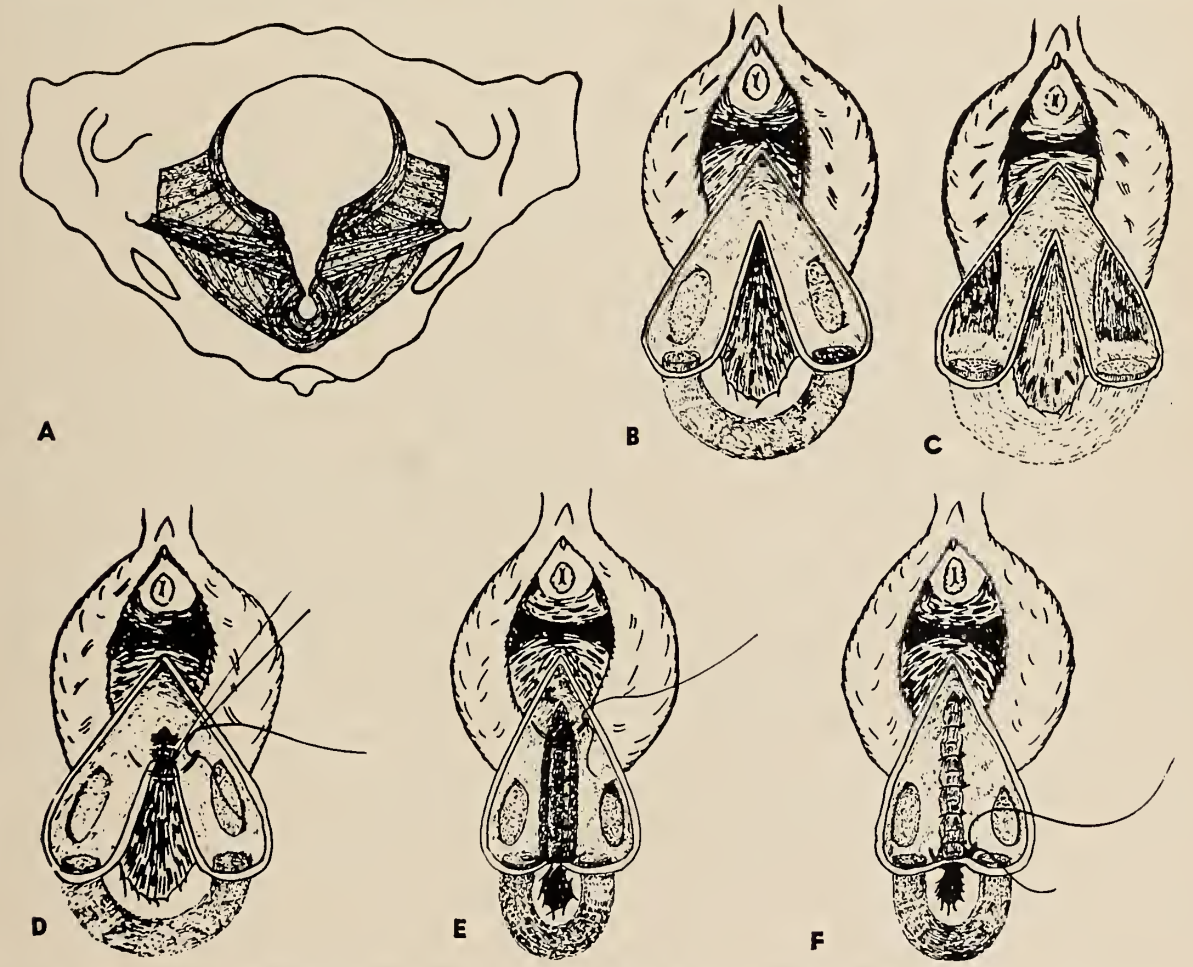
Large babies were associated with third degree laceration in a significant number of cases (Table 3).

General anesthesia was used in 13 cases and spinal anesthesia in 62, but it cannot be concluded from that fact that spinal anesthesia is an etiological factor in third degree laceration, for spinal anesthesia was employed in the majority of deliveries surveyed in this study.

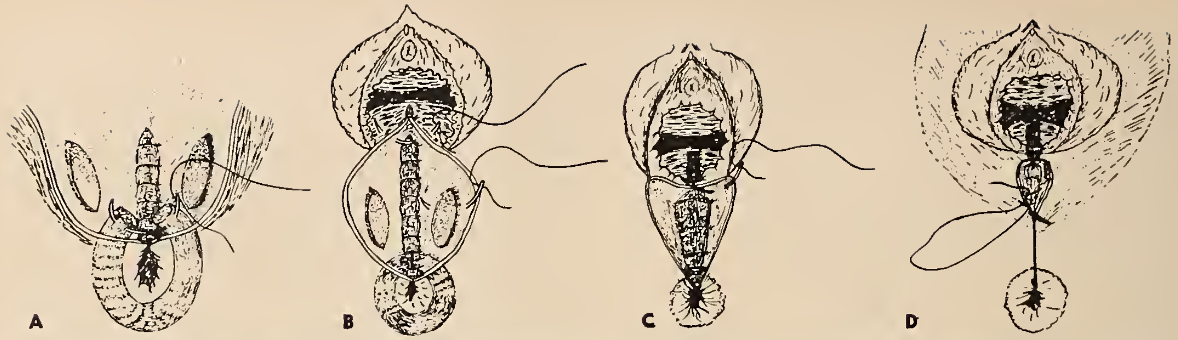
In 58 cases the attending physician was a specialist, in 13 a non-specialist, and in four a resident. These data are indicative only of the widespread employment of median episiotomy by specialists.

MISCELLANEOUS FACTORS

Anterior Pelvic Depth. From a mechanical standpoint it is apparent that if the anterior pelvic depth



A, diagrammatic illustration of the muscle structures involved in third degree laceration. *B*, the tissues to be repaired. Note the prominence of the severed deep transverse perineal muscles which are often mistaken for the sphincter ani. *C*, taken from a drawing in Greenhill's text, purports to show the presence of the exposed levator muscles indicated by X. Actually, however, the levators lie too far laterally to be seen in median episiotomy. It is the fascia covering the levators that is visible, and it is this structure alone that is reapproximated in the repair. *D*, the repair is commenced at the apex of the rectal laceration with interrupted sutures. The first layer goes through only the serosa, muscularis and submucosa of the rectum to bring about inversion of the edges. Suturing is carried down to the anal pillars. *E*, a second layer of interrupted sutures is started just above the apex of the first layer and includes the perirectal fascia and a portion of the fascia of the rectovaginal septum. *F*, the second layer is carried past the anal margin to the skin of the perineum.



After the rectal wall has been repaired in two layers, the cut ends of the sphincter ani are grasped with two Allis clamps. Then, *A*, two or three mattress-type sutures are used to approximate the severed ends, with care taken to include only the fascial sheath and peripheral portions of the sphincter ani, since sutures through the muscle body produce painful spasm of the muscle. *B*, similar approximation of the cut ends of the deep transverse perineal muscles. *C*, approximation of the superficial fascia. *D*, subcuticular closure of the skin.

is greater than normal there is increased likelihood of third degree extension of laceration, since the posterior segment of the pelvic outlet must be opened wider for delivery.

Position of Legs in Stirrups. When the thighs are placed in extreme abduction and hyperflexed on the abdomen, the skin and superficial fascia are drawn tight over the perineum, which causes anterior displacement and fixation of the rectum. Concomitant with the loss of elasticity of the perineum is an increased tendency toward third degree extension.

Type of Forceps Employed. It would seem that use of forceps having a wide separation of opposing shanks, such as Simpson forceps, entails greater liability of extension of laceration into the rectum.

TECHNIQUE OF REPAIR

The technique of repair of laceration used by the author is as follows:

Upon completion of the third stage of labor, the patient is redraped and a thorough inspection of the vagina and cervix is made. Often a button-hole opening into the rectum is noted on rectal palpation. This is converted into a complete laceration. A Gelpi retractor is put in place at the mucocutaneous junction of the vaginal orifice. No. 000 chromic catgut is employed throughout. (See illustrations.)

After operations all patients are treated exactly as a normal puerpera would be treated except that, when enemas are given, extreme care is taken to direct the nozzle posteriorly.

In the series here reviewed there was a slightly higher morbidity rate than is associated with cases in which third degree laceration does not occur, but in none of the three cases in which this reaction did develop was it directly attributable to perineal infection.

The most common complication, secondary anemia of moderate to severe degree, occurred in 16 cases. There were no rectovaginal fistulae or wound separations. Anal cryptitis developed in one case.

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Discussion by **CLYDE V. VON DER AHE, M.D.,** *Los Angeles*

For any operative obstetrical procedure, speaking generally, complications exist. This factor, when properly weighed and evaluated, will determine the safety of any given procedure. The solitary objection to the use of median episiotomy has been the danger of downward extension through the anal sphincter and rectal mucosa. In the series presented by Dr. McNulty, this occurred in only 0.5 per cent. The usual incidence varies from two to four per cent.

As important as it is to know how to properly repair a complete (or incomplete) third degree perineal laceration, I think it is equally important to know the limitations of median episiotomy; so that when it is used we can anticipate that the incidence of third degree perineal laceration will drop, and eventually parallel the incidence following mediolateral episiotomy.

Briefly to review and reemphasize this, the conditions limiting the use of the median episiotomy are listed in the order of their importance:

1. The subpubic arch or the anterior pelvic depth. As the arch becomes more narrowed, the fetal head is forced more posteriorly, in order to gain enough room to pass under the arch.

2. Malposition of the fetal head, particularly persistent occiput positions and deep transverse arrests.

3. The use of forceps. I am happy to hear Dr. McNulty emphasize this point. It has been my conviction for a long time that the shank and the blades of the forceps are as important as the fetal head in the production of third degree lacerations. Median episiotomy is also contraindicated in cases of forceps-rotation, and in breech deliveries with forceps on the after-coming head.

4. Not only is the length of the perineal body important, but also the texture of the perineal tissue. The latter, how-

ever, is unpredictable. This tissue may give way readily when a firm perineum is expected.

In the performance of median episiotomy, it is important to incise the vaginal mucosa upward for a distance of at least five centimeters. This procedure not only prevents tearing upward into the vault, but actually allows the repair of the rectovaginal fascia at a higher level than ordinarily would be possible. This, coupled with postpartum perineal exercises, is an important step forward in the prophylaxis of uterine prolapse.

It is my belief that the routine use of the prophylactic angle suture following median episiotomy is important. This suture, introduced by the late Dr. Norman Williams, consists of a double strand of 00 or 000 catgut, placed about one inch lateral to the lowermost point of the episiotomy. It goes through the perineum, comes out in the vagina below the mucosa, and then outward on the opposite side, through the skin of the perineum one inch lateral to the angle of the episiotomy. This suture is tied loosely enough to admit two fingers into the loop. It is a real aid in preventing the downward extension of the episiotomy. We have had but two cases of complete perineal laceration since using this technique, and in one other case it was necessary to cut the sutures because of pronounced edema of the fetus. The suture was cutting the baby's skin.

Finally, I think that the figures presented in Dr. McNulty's paper tend to substantiate the growing feeling that median episiotomy can be used more frequently without materially menacing the patient or increasing the incidence of third degree perineal laceration.

Placement Assistance for Doctors

The American Medical Association recently initiated a new program to acquaint physicians leaving military service with existing medical opportunities, and to assist State Selective Service Medical Advisory Committees in replacing deferred physicians classified as Priority 1 under the "Doctor Draft Law."

This program, inaugurated by the A.M.A. Council on National Emergency Medical Service with the cooperation of the Department of Defense and the Selective Service System, has the enthusiastic endorsement of state medical societies and chairmen of Selective Service Medical Advisory Committees.

The names of physicians to be released from service, and other necessary information, will be supplied to the Council on National Emergency Medical Service by the offices of the three surgeons general. The council will communicate with each of these physicians to determine, in general, his post-service plans, his medical qualifications and specialty, as well as the state in which he prefers to work.

The names of physicians interested in receiving additional information will then be grouped by states and sent to State Selective Service Medical Advisory Committees. While these names are being forwarded primarily as potential replacements for deferred Priority 1 physicians, further action, if any, with respect to them will depend entirely on the wishes and desires of the advisory committees.

This same information will be made available to state medical societies through the Physicians' Placement Service of the A.M.A. Council on Medical Service in accordance with current procedures.

—From the A.M.A. *Secretary's Letter*

Spontaneous Epistaxis

Theoretical Consideration of Etiologic Factors and Treatment

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• *In a study of data on 136 hemorrhages in 14 patients with posterior epistaxis it was noted that the incidence of bleeding was higher at some hours of the day than at others. The times of highest incidence were more or less inverse to hours of peak systolic blood pressure in normal subjects, suggesting that bleeding occurs as a result of dislodgement of an embolus at times of vasodilation. If that is true, then it should be possible to control bleeding by giving vasoconstrictive drugs. There are not as yet enough data on trial of that method to warrant conclusions.*

SPONTANEOUS EPISTAXIS is at least annoying to the patient and, if it is severe or recurrent, may be alarming. That there is no uniformly effective means of treatment is indicated by the number of articles in the literature describing various methods.

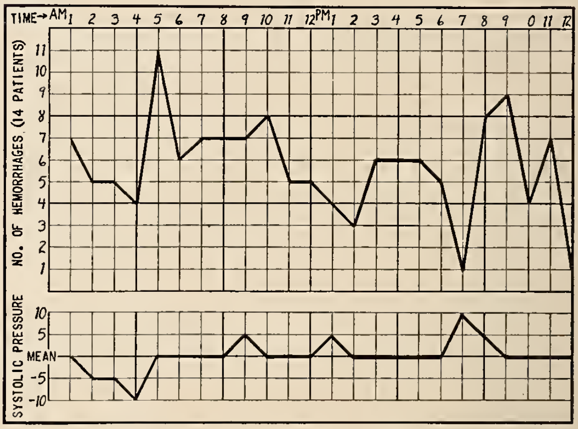
The author, following the example of several other investigators, designates hemorrhage arising anteriorly to the anterior end of the middle turbinate as *anterior* and hemorrhage from a site posterior to that line as *posterior*. Table 1 presents data on the incidence of bleeding from each of these two areas as noted by Hallberg,[1] by Ogura and Senturia,[3] and by the author. The data reported by Hallberg and by Ogura and Senturia indicate the incidence in hospital or clinic practice, and the author's data indicate the incidence in ordinary office practice of rhinology.

Treatment of anterior hemorrhage, mostly from Little's or Kiesselbach's area, is rarely a problem, but control of posterior bleeding may be extremely difficult. Therefore, records of 14 patients who were hospitalized for treatment of spontaneous epistaxis of posterior or unknown origin were reviewed to appraise the method of treatment and to consider factors that may be related to the onset and recurrence of hemorrhage, and possibly to control. The only basis of selection was that the patients were hospitalized and accurate records were available. Epistaxis was most commonly observed in patients in the fifth and seventh decades of life. Data were collected on 136 hemorrhages in the 14 patients.

Nasal packing was used as a measure to control bleeding in all cases, and in many instances postnasal packing also. In two patients the bleeding was from a point far posterior in the inferior meatus and had the characteristics of bleeding from the nasopharyngeal plexus as described by Woodruff.[5] It was controlled by packing the bleeding area under the turbinate and placing a second pack between the turbinate and the septum to keep the former pack in place. In all other cases in which there was more than one hemorrhage during the time in hospital, there was bleeding through the packing. The amount varied from slight oozing to profuse bleeding, despite adequate packing.

The hour of onset of the 136 episodes of bleeding was charted (Chart I) and it was noted that the incidence of onset was low in the four hours after mid-

CHART I



Comparison of time of onset of bleeding in present series with hourly blood pressure variations in normal subjects.[2]

TABLE 1.—*Site of Bleeding in Various Series.*

	Anterior	Posterior	Undetermined
Hallberg*	33%	22.7%	28.3%
Ogura and Senturia	63%	37 %	....
Author	76%	18 %	6 %

*Percentages total less than 100 because certain hemorrhages caused by other factors were excluded.

Presented before the Section on Eye, Ear, Nose and Throat at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

night and highest at 5 a.m. There was a slight rise at 10 a.m. and a decline from then until 2 p.m. The lowest incidence of the day was at 7 p.m. A secondary peak occurred at 9 p.m.

Since frequent observation of the blood pressure of patients in the present series was not practical, data from Mueller and Brown[2] on hourly variations in systolic blood pressure from the mean in 26 normal persons was charted (Chart I) for purposes of comparison with the incidence of bleeding in the 14 patients studied.

The questions that arose from the foregoing observations, and the conclusions drawn, were as follows:

1. Is nasal and/or postnasal packing a successful method of controlling epistaxis?

Where "spot packing"—that is, packing directly over the bleeding vessel—was possible, the method was successful. In all other cases, bleeding persisted despite packing. In the present series, ligation of the external carotid artery was resorted to in three cases after adequate packing, multiple transfusions and other supportive measures had failed. Ligation controlled the bleeding and had no undesirable sequelae. It is the author's conclusion that in many cases packing is not a satisfactory method of control of epistaxis.

2. Is there a cyclic incidence of onset of recurrent bleeding?

The author believes that the data as to hour of incidence (Chart I) indicate that there is.

3. Is the onset of hemorrhage related to blood pressure?

It is to be noted in Chart 1 that the peaks of incidence of hemorrhage do not correspond with peaks of systolic blood pressure. The period of sustained fairly high pressure during the afternoon is not associated with a high incidence of onset of bleeding, and indeed the hour of lowest incidence of bleeding is the same as the hour of highest blood pressure.

4. Is peripheral vasodilation a factor in recurrence of hemorrhage?

One factor which may be of significance in cessation of arterial bleeding is contraction of the stria muscularis which closes or narrows the lumen. Vasodilation, by enlarging the lumen so that the thrombus no longer occludes it, may permit bleeding to recur. Chart I suggests such a possibility: the period of lowest blood pressure, and therefore greatest vasodilation, is followed by the high peak of onset of hemorrhage at 5 a.m. The secondary peak at 9 a.m. follows a period of declining blood pressure.

Assuming that hemorrhage does occur as a result of vasodilation, it should be possible to control it with vasoconstrictive drugs. The successful use of pituitrin to control pulmonary bleeding as reported by Rist in 1911 and more recently by Trimble and Wood[4] and others is based on this principle. Intravenous use of pituitrin causes vasoconstriction almost immediately and the effect lasts about 30 minutes. Other drugs—such as ephedrine, Propadrine® and Neosynephrin®—that have a direct action on smooth muscle of the vessel walls and that are sympathomimetic may be given in coated tablets or capsules timed to produce vasoconstriction at the times when epistaxis is most likely to occur. It is suggested that they be given along with small doses of barbiturates at least twice a day. As the commonly used enteric coating will liberate the drug in about four hours, the drug should be given at about 5 p.m. and again at midnight. The presence of extremely high systolic blood pressure would of course contraindicate the use of such drugs owing to the possible danger of cerebral accident. Epistaxis in such circumstances might be beneficial.

Observations are being made on the effectiveness of this means of therapy, but not enough data to warrant conclusions have been accumulated.

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Discussion by LELAND G. HUNNICUTT, *Pasadena*

Dr. Hollingsworth apparently has made an accurate observation that bleeding occurs while the blood pressure is low, rather than when it is high as we have always supposed in the past.

An internist with whom I discussed the subject expressed belief that bleeding is liable to occur when the patient gets up in the night to go to the bathroom, as there is a tendency to blow the nose before going back to bed. This is an observation for which I cannot vouch. I would like to suggest another cause—that drying in the posterior part of the nose weakens the mucous membrane overlying the bleeding point. One of the terminal branches of the sphenopalatine artery extends from the sphenopalatine foramen over to the middle turbinate and another down to the inferior turbinate. The artery is nearest the surface at the point at which it enters the posterior and lateral part of the inferior turbinate. There it can be seen in outline under the mucous membrane. The inspired air rushing over this area has a pronounced drying effect. I have noticed that a patient who is extremely restless is less liable to have a nose bleed than one who sleeps soundly.

Dr. Hollingsworth has stimulated our thinking on this most difficult problem, and any new information that can be brought out is of benefit to all of us.

CASE REPORTS

- **Familial Pseudohypoparathyroidism**
- **Fatal Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy**
- **Acute Exfoliative Dermatitis Due to Dormison®**
- **Salmonella Infection in a Premature Infant with Congenital Anomalies**

Familial Pseudohypoparathyroidism

A Report of Two Cases

HELEN MACKLER, M.D., J. R. FOUTS, M.D.,
and J. W. BIRSNER, M.D., *Bakersfield*

THE FIRST THREE CASES of so-called pseudohypoparathyroidism to be described were reported by Albright and his colleagues in 1942.[1-4, 6, 9-16] Since then 22 additional cases have been reported. One of the authors (H.M.), unacquainted with the possibility that the condition might be familial (Elrick[9]), found five additional probable cases in three generations of the family from which the sister and brother reported upon herein derived. It seems highly probable that many subclinical cases—with subnormal mentality as a manifestation—might be recognized if the relatives of each patient with florid expression of the disease were studied.

Since Albright's published description of a pseudo form of this clinical entity, relatively few instances of "idiopathic hypoparathyroidism," a previously widely recognized clinical entity, have been recorded. Does this suggest that pseudohypoparathyroidism, especially in the incomplete form, may be more common than true instances of hypoparathyroidism?

Prominence of one aspect of the clinical picture may defeat recognition of the syndrome as a whole. In the cases which have come to the attention of the authors, almost all fields of medical practice have had primary interest—general medicine, endocrinology, pediatrics, dermatology, psychiatry, neurology, radiology, pathology, general surgery, orthopedics, urology, ophthalmology, dentistry and human genetics.

In the three cases reported by Albright, the patients had tetany associated with hypocalcemia and hypophosphatemia that was not affected by injection of parathyroid hormone. All the patients had retarded intelligence, a round face and short stature. Epilepsy had been diagnosed initially in one patient. This diagnosis had been made also in cases reported by other investigators.

Stunting of growth, particularly noticeable in the metacarpal and metatarsal bones and in the teeth, and associated with early closure of the epiphyses, appears at an earlier age in pseudohypoparathyroidism than in idiopathic hypoparathyroidism. The metacarpal bones, unlike those observed in Brailsford's[7] syndrome, vary in length. Congenital vascular anomalies, as noted in Turner's syndrome, are not apparent. Females are predominantly affected—an observation common to both pseudohypoparathyroidism and Turner's syndrome.

Pseudohypoparathyroidism is characterized by the following signs and symptoms: short stature; broad face; subnormal intelligence; unerupted teeth; thick skull; thick and short metacarpal and metatarsal bones; convulsive seizures; tetany, active or easily produced; increased centers of ossification; electroencephalographic irregularities; calcifications of the soft tissues, especially intracranial; hypocalcemia; elevated phosphorus content in the serum; low content of phosphorus in the urine; lack of responsiveness to parathyroid hormone (Ellsworth-Howard[8] test) and diminution of other glandular components. Not all these criteria need be present to warrant a diagnosis of pseudohypoparathyroidism. Bakwin[5] reported in 1921 that a high proportion of infants with tetany had broad faces; Browne (cited by Selye[14]) described the mother of a patient as having only portions of the syndrome. One of the patients reported upon by Elrick[9] responded to injection of parathyroid hormone with only moderate increase in urinary phosphorus and decrease in serum phosphorus. Metacarpal stunting was not present in a case reported by Medill.[11] Berardinelli[6] did not submit the patient to testing with hormone in a case reported by him.

The occurrence of the syndrome in siblings was not described until Elrick,[9] in 1950, reported upon pseudohypoparathyroidism in identical twins; he also mentioned similarly involved twins observed by Talbot and Crawford.

Pseudohypoparathyroidism in a sister and a brother is reported herein. When the diagnosis of pseudohypoparathyroidism in one case, that of a 22-year-old woman, was established, the family was requested to bring in the other siblings. A 16-year-old sister and a 10-year-old brother were entirely normal, although of short stature like the mother. (The shortness of stature was considered coincidental.) The fourth child, a boy 29 months of age (Case 2), had unequivocal signs of pseudohypoparathyroidism. Members of three generations of the family have at least some features of the syndrome. The paternal grandmother has thickening of the skull, a tendency to short, thick metacarpal bones, and a greatly increased number of sesamoid bones in the hands and feet. She previously had noted that slow learning together with a broad face seemed to be a family characteristic. Of her 13 children, three had died during convulsions while infants and three of her living children have broad faces. Two of this second generation have been examined. They have thickened skulls and each has at least one

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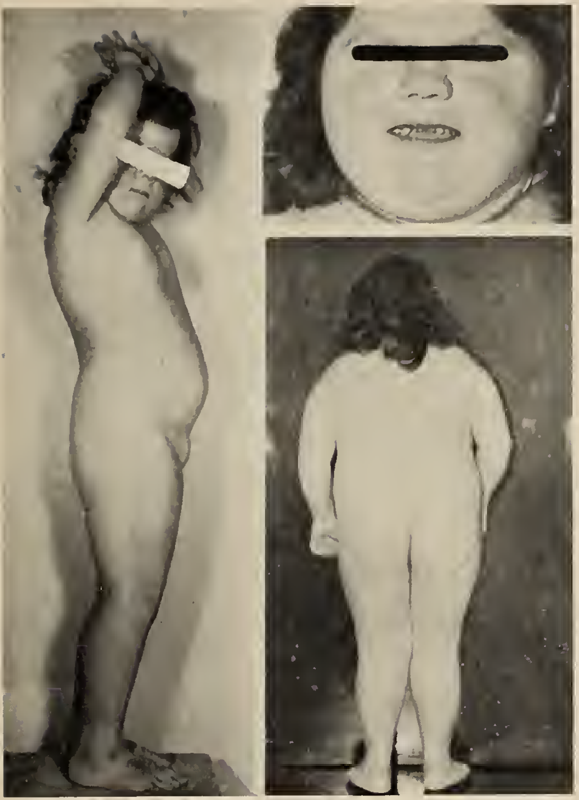


Figure 1.—*Left,* the patient (Case 1) at the age of 9 years. *Right (upper and lower),* same patient at 22 years of age.

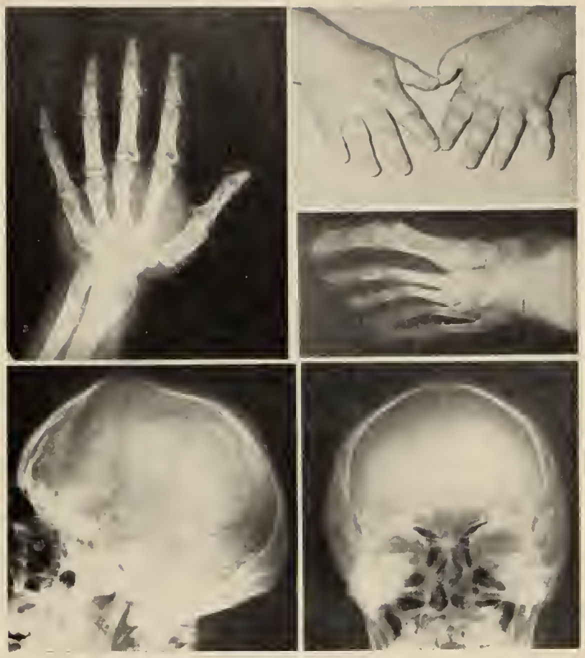


Figure 2.—Photograph of hands and x-ray films of metacarpal and metatarsal bones and skull taken when patient (Case 1) was 22 years of age.

somewhat thickened and shortened metacarpal bone. Another brother, not yet examined, has facies typical of the condition. An apparently normal sister has a round-headed, mentally retarded son.

REPORTS OF CASES

CASE 1: The hospital record of a woman 22 years of age who was admitted to the Kern County General Hospital, Bakersfield, described her as having been "short and squatty," at the age of two years when she was first admitted. No specific diagnoses or tests were recorded at that time.

When she was seven years of age she was readmitted. In the history taken at that time it was noted that a convulsion had occurred at the age of three months and a series of generalized convulsions at the age of five years. The patient was 4 inches shorter and 20 pounds heavier than the average 7-year-old girl. The blood pressure was 130 mm. of mercury systolic, 100 mm. diastolic. The blood and the urine were normal except for traces of albumin in the urine. A glucose tolerance test recorded a flat curve with a maximum of 190 mg. per 100 cc. of blood a half hour after injection and a decrease to 60 mg. at the end of six hours. The urine was sugar-free during the test. Roentgenographically, the skull was considerably thickened; there was widening of the right fifth metacarpal bone and lipping of the distal ends of the fifth metatarsal bones.

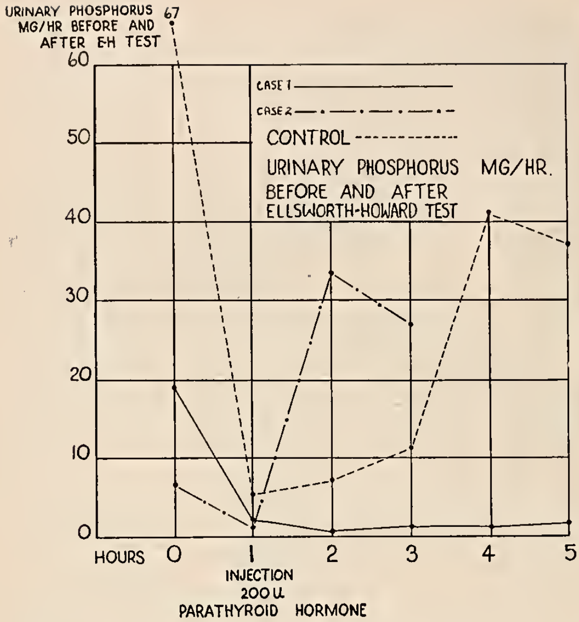
At the age of eight the patient had several convulsive seizures characterized by hyperventilation followed by opisthotonos and a short period of deep sleep.

When the patient was nine years of age her stature was still retarded (Figure 1) and she was grossly overweight. In roentgenograms taken at that time the fifth metacarpal bones were observed to be short, wide and curved, with areas of decalcification in the central portion of the diaphyseal ends; and the bones of the skull were greatly thickened throughout. The calcium content in the serum was 8.6 mg. per 100 cc. on one occasion and 7.9 mg. a few weeks later. The basal metabolic rate was approximately minus 3 per cent.

The patient was not observed again until the time of readmittance at 22 years of age. She had received no definitive therapy in the interim. Her height was 53 inches and her weight 149 pounds. Her "mental age" was about six years and she was pleasant and cooperative. She had had three menstrual periods at approximately the age of 15, but none since. Convulsions had not occurred for several years. The voice was coarse and hoarse, the skin of the face florid. Trousseau's sign was readily elicited and was not altered in appearance or disappearance by hyperventilation. There were no defects in vision. Visible calcifications of the soft tissue were not noted. Great thickening of the calvarium, calcification of the basal ganglia and many unerupted teeth were observed roentgenographically. The patient had only 12 erupted teeth, most of them notched. The metacarpal and metatarsal bones were characteristically shortened, with bowing of the radii (see Figure 2).

An Ellsworth-Howard test was done (see chart). Injection of 200 units of parathyroid extract demonstrated inability to mobilize phosphorus in the urine; there was no concomitant change in the phosphorus content in the serum.

The patient was given a high protein diet relatively low in phosphorus with 1 gm. of calcium gluconate per day and approximately 150,000 units of vitamin D per week. After six months of this regimen. the body weight was 30 pounds lower and the complexion no longer florid. The patient had progressed three grades in reading. Subcutaneous areas of calcification had appeared and were expanding. The calcium content of the serum rose from 6.5 mg. to 7.88 mg. per 100 cc., and the phosphorus content decreased from 5.5 mg. to 4.7 mg. per 100 cc. The urine was usually nearly free of calcium by Sulkowitch's test.



CASE 2: A brother of the patient in Case 1 was first observed at the age of three weeks with complaint of cyanosis during what was described as a "chest cold." The patient had fever, cough and intermittent cyanosis. There were many rales in the chest. He promptly became cyanotic when laid flat, although the color became satisfactory when he was held upright. Upon roentgenologic examination it was noted that the thymus was not enlarged and there appeared to be no obstruction of the trachea. Cyanosis disappeared with the clearing of the pneumonitis.

When the patient, whose parents considered him well and normal in development, was admitted to the hospital for examination at the age of 29 months, the general skeletal configuration that has been noted in other cases of pseudohypoparathyroidism was observed. Chvostek's sign was present. The child was not yet talking and was still nursing. In roentgenograms the calvarium was observed to be nearly twice as thick as normal, and the fifth metacarpal bones were thick, dense and shortened. Dental development was subnormal, only 16 teeth having erupted (see Figure 3). There was a small subcutaneous calcification over one ankle, but no calcification in the basal ganglia. Intravenous administration of 200 units of parathyroid extract slightly increased the content of phosphorus in the urine although the amounts appearing in the urine were considerably less than those of the control, an adult who was given 100 units of the same preparation.

The same regimen that had been followed by the patient's sister was prescribed, except that the amount of vitamin D was 100,000 units per week. The calcium gluconate solution replaced milk. The patient's speech improved rapidly and he became more alert. Subcutaneous calcification over the ankle increased steadily in size.

SUMMARY

Pseudohypoparathyroidism in a 22-year-old woman and in her 29-month-old brother is reported. Some of the characteristics of the syndrome were noted also in the paternal grandmother, in at least three of her thirteen children, and in one other grandchild in addition to those reported upon. Previously reported cases of pseudohypoparathyroidism are cited and the characteristic features of the syndrome are described briefly.

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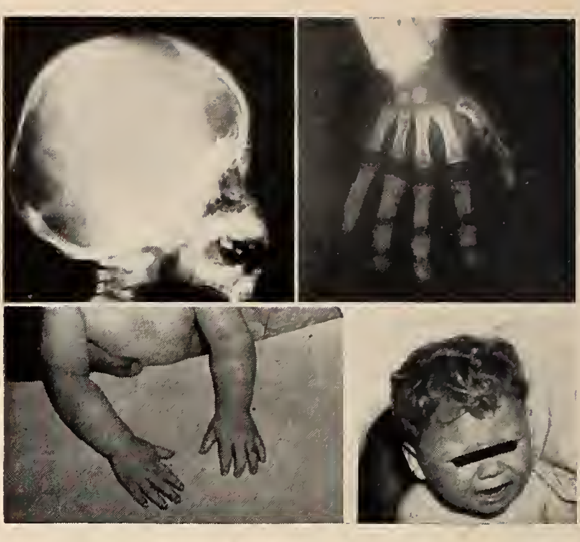

Figure 3.—Patient in Case 2.

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Fatal Aplastic Anemia Following Chloramphenicol (Chloromycetin) Therapy

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CHLORAMPHENICOL (Chloromycetin®) was first produced in 1947 from the soil actinomycete[5] and has been shown to be effective clinically against many organisms pathogenic in humans. Ease of administration, availability, moderate cost and the low incidence of gastrointestinal irritation associated with it have contributed to widespread use of the drug. These would be favorable attributes of any therapeutic agent, yet they could be nullified to a great extent if the agent in question had a considerable degree of toxicity, even though injury from it occurred infrequently.

Following is a report of a case of fatal aplastic anemia that developed after six weeks of therapy with chloramphenicol.

CASE REPORT

A 35-year-old white married woman was admitted to the French Hospital on March 7, 1952, because of generalized icterus, anorexia and lassitude. The illness had begun Jan. 10, 1952, with fever, chills and symptoms of irritation of the bladder. These symptoms were intermittent for the next ten days, and the patient was examined in the urological department of the hospital on January 23. A specimen of urine obtained by catheter had specific gravity of 1.005 and contained a trace of albumin. There were 5 erythrocytes per high power field, occasional leukocytes and epithelial cells. A culture was negative for acid-fast bacilli, but on it grew organisms morphologically and biochemically resembling Pseudomonas aeruginosa.

The patient received one injection of 400,000 units of procaine penicillin on January 23 and chloramphenicol, 250 mg. thrice daily, was prescribed. An intravenous urogram and x-ray of the chest on Jan. 24 were reported as within normal limits. When observed Jan. 30 and Feb. 6 the patient said she felt a great deal better. A nine-hour sample of urine was examined by Addis' method on Feb. 1, 1952. The following was reported: Total quantity 850 cc., specific gravity 1.005, acid reaction, albumin quantitative 1.7 gm., erythrocytes 136,666, casts 700, and leukocytes 666.

On Feb. 22 chills, fever and sweating developed, lasted one day, and were followed by malaise, anorexia, nausea and weakness. Jaundice was first noted by the patient on March 1. It increased gradually until admittance to hospital on March 7.

In the six weeks preceding admittance to the hospital the patient had taken a total of approximately 30 gm. of chloramphenicol and no other medication.

Past History. Chronic glomerular nephritis had existed since 1947, apparently a result of streptococcal infection of the throat in 1946. The patient had been rather closely observed in the interim, during which she carried out the duties of a housewife and mother in a normal manner, and objective studies from time to time indicated very little progression of renal disease. Specimens of urine were constantly of low specific gravity. Mild proteinuria was present, and occasionally hematuria was noted microscopically. Intravenous urograms were normal except for somewhat faint concentration of dye. Hemograms were within normal limits. The blood pressure varied from 130 mm. of mercury systolic and 96 mm. diastolic to 150 mm. and 104 mm. respectively. In December 1950 the urea nitrogen content of the blood was 15 mg. per 100 cc. In December 1950 abortion was done as a precautionary measure in view of the renal disease.

Upon physical examination March 7, 1952, the patient was observed to be well developed and well nourished. She was not in acute distress, but pronounced jaundice was present. The edge of the liver was palpable two fingers' breadth below the right costal margin and it was slightly tender on percussion and deep palpation. Temperature, pulse and respirations were normal. The blood pressure was 140 mm. of mercury systolic and 90 mm. diastolic. Erythrocytes numbered 4,070,000 per cu. mm. and the hemoglobin content was 12.4 gm. per 100 cc. Leukocytes numbered 6,100—68 per cent neutrophils and 32 per cent lymphocytes. Platelets were reported as normal. Urinalysis showed specific gravity of 1.003, a trace of albumin, no sugar, one plus bile, two to four leukocytes per high dry field, and many epithelial cells.

Prothrombin time was 82 per cent of normal. The icteric index was 115 units, thymol turbidity 28 units, urinary urobilinogen 1.26 Ehrlich units, serum cholesterol content 210 mg. per 100 cc., total protein content in the serum 8.6 gm. per 100 cc. (albumin 3.3 gm. and globulin 5.3 gm.), serum bilirubin content 14.3 mg. per 100 cc. (direct reaction 2.3 mg. per 100 cc.) Cephalin flocculation was two plus.

A diagnosis of viral hepatitis was made. The patient was kept in bed and a diet high in protein, carbohydrate and vitamins was prescribed. Thiamine chloride, 10 mg. daily, was given and there was no other medication. The patient made excellent progress and on March 21 the icteric index was 22 units, thymol turbidity 9.5 units, and the urine negative for bile.

On the same day, the patient noted a few petechiae on her arms and attributed them to scratching. Next day the number of petechiae had increased, but the patient said she felt well. On this day bleeding time was 1½ minutes and clotting time 7 minutes. The following evening, March 23, catamenia began and became profuse. A persistent cough productive of a bloody sputum developed and there were increasing numbers of petechiae and areas of ecchymosis over the entire body. Erythrocytes numbered 1,450,000 and the hemoglobin content was 4.6 gm. per 100 cc. of blood. The cell volume was 14 per cent of the whole blood. Leukocytes numbered 3,200—51 per cent neutrophils and 48 per cent lymphocytes. No platelets were observed in the blood. Bleeding time was 5 minutes, clotting time 12 minutes, and there was no clot retraction in 8 hours. Urinalysis showed three plus albumin, no sugar, 40 to 50 erythrocytes per high dry field and specific gravity of 1.010. Erythrocyte fragility was normal and the result of Coombs' test was negative. The sternal marrow was hypoplastic and no megakaryocytes were noted in it. No marrow substance could be aspirated from the spinous process in two attempts.

Following are data on results of examination of the blood at various times during the last period of hospitalization:

		Per cubic millimeter			Leukocyte differential (per cent)		
Date 1952	Hemoglobin gm. per 100 cc.	Erythrocytes	Leukocytes	Platelets	Neutrophils	Lymphocytes	Eosinophils
Mar. 7	12.4	4,070,000	6,100	Normal	68	32	
Mar. 24	4.6	1,450,000	3,200	None seen	51	48	1
Mar. 25	9.2	3,160,000	2,200	None seen	43	53	4
Mar. 26	12.	3,960,000	1,100	11,000	41	59	
Mar. 28	11.	3,640,000	1,200	Too few for accurate count	28	71	1

Six 500 cc. transfusions of whole blood, including 1,500 cc. of fresh whole blood, were given between March 24 and March 26, but the condition of the patient deteriorated rapidly. The pulse rate rose to 120 per minute. Respirations were shallow and labored and the rate 40 per minute. The rectal temperature reached 103° F. New showers of petechiae appeared daily, and gross melena, epistaxis, gingival bleeding, hemoptysis and vaginal bleeding continued. The patient became progressively weaker and died March 29.

From the Department of Medicine, French Hospital, San Francisco.

In addition to blood transfusions and general supportive measures, the patient was given penicillin, 600,000 units daily, corticotropin (ACTH), caffeine sodium benzoate, and oxygen both by mask and positive pressure.

NECROPSY

The skin of the entire body was faintly icteric, and over the skin of the trunk, the extremities and the abdomen were multiple purpuric areas 3 mm. to 10 mm. in diameter. Multiple purpuric areas were present over the surface of the diaphragm, along the wall of the stomach and on the mucosal and serosal surfaces of the small bowel. Semi-liquid, black tarry fecal matter was present in moderate amount in the terminal ileum and in progressively greater quantity distally to the colon. No evidence of ulcer or neoplasm was noted in the gastrointestinal tract, which was patent throughout.

Sections of bone marrow from the sternum and vertebrae were essentially similar histologically. Fat cells were predominant with sparsely scattered clusters of myeloid elements lying between. The distribution was not uniform, some areas approaching a normal degree of cellularity and other areas being entirely adipose. In most regions there were at least a few marrow elements between the fat cells. There were representatives of all constituents present, but the lymphocytic series was more prominent. Megakaryocytes were rare.

The heart weighed 275 gm. The external surface of the pericardium was smooth and the pericardial cavity contained a small amount of straw-colored fluid. The cardiac chambers, endocardial surface, valve leaflets and coronary vessels showed no abnormalities. Microscopically the cardiac muscle fibers appeared of normal size and shape with no evidence of infiltration or scarring of the myocardial tissue.

The left lung weighed 575 gm., the right 975 gm. Both pleural cavities contained minimal amounts of straw-colored fluid. The mucosa of the bronchi was deep pink and copious amounts of fluent blood were present in the lumen. The parenchyma of the lungs was deeply mottled, with a deep, shiny, blackish purple the predominant color. Only near the apices were there small areas resembling normal lung tissue. Both lungs were hypocrepitant and had a solid hepatic feeling on palpation. Cut sections revealed approximately 80 per cent of the lung mass to have a deep purple, solid appearance, with small purple, jelly-like clots emerging from the surface. On microscopic examination the normal architecture of the pulmonary tissue was almost entirely obscured. In some areas massive amounts of red cells and a pink-staining, homogenous material filled the alveoli and some segments appeared entirely airless. No evidence of tumor was noted.

The spleen weighed 125 gm. The capsule was smooth and of uniform slate-gray color. On section the surface appeared uniformly firm, and malpighian corpuscles were evenly distributed throughout the parenchyma. Microscopically the architecture of the spleen appeared to be within normal limits.

The liver weighed 1,500 gm. The external surface was smooth and glistening. The margins were sharp and well defined. Sections were a normal reddish-brown, and lobular markings were clearly visible. A normal lobular pattern was present, with slight thickening of the portal triads, but no extension of these structures. The thickening was due chiefly to lymphocytic infiltration involving about one-half of the triads. Slight fibroblastic proliferation was noted. The most striking feature was disarray of lobules in many areas. The liver cords, particularly at the lobular centers, were obscured and the liver cells haphazard in disposition. They were variable in size and shape with occasional multinuclear forms. Also noted at the lobular centers, quite commonly, were dilated canaliculae containing bile thrombi. These were seen in every second or third lobule. The sinusoids were not distended. The Kupffer cells were enlarged, and many contained brown granular pigment, apparently hemosiderin.

The gallbladder was a turgid, deeply mottled, dark purple sac. It contained a quantity of purplish, jelly-like clots and

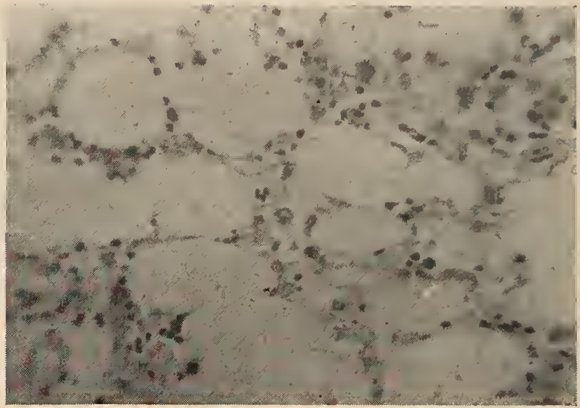

Figure 1.—Bone marrow (high power) showing acellularity.

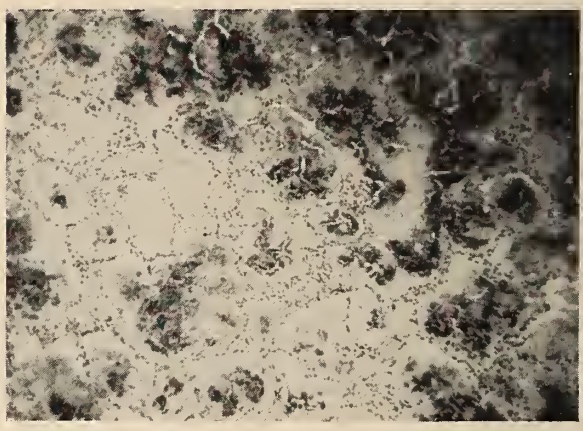

Figure 2.—Lung (low power). Note hemorrhage into alveoli.

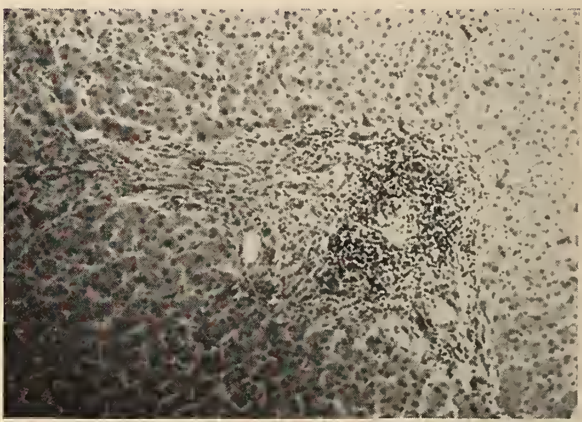

Figure 3.—Liver (high power). Note periportal round cell infiltration.

viscid purplish-black mixture of blood and bile. There were large amounts of blood within the fibers of the muscular coat and infiltrating into the mucosal layer. No stones or tumors were present in the gallbladder or common duct.

The adrenal glands were grossly normal. Microscopically the usual pattern of the glands did not appear to be disturbed.

Each kidney weighed 118 gm. The capsules were stripped with ease, revealing finely pebbled or granular surfaces, which were diffusely covered with small dark purpuric nodules approximately 1 mm. or less in diameter. Many of the glomeruli had undergone partial or complete hyalinization. Those which were not involved were enlarged and excessively cellular. Occasional remnants of crescents were noted and there was capsular adhesion at many points. The convoluted tubules were disposed in clusters of dilated elements separated by areas of lymphocytic infiltration and fibrosis in which the tubules were greatly diminished. The dilated lumina contained hyalin and acidophilic casts. The glomerular capillaries were narrowed where hyalinization had not supervened. Symmetrical thickening of the walls of the smaller divisions of the arterial tree was noted, whereas the larger divisions were relatively free of sclerotic change. There was little inflammatory infiltration in the medulla and the pelvic membranes were uninvolved.

The final diagnosis was: 1. Marked hypoplasia of the bone marrow; 2. Chronic glomerulonephritis; 3. Subacute hepatitis; 4. Massive tissue hemorrhage into lung parenchyma, bilateral.

DISCUSSION

It seems clearly established that aplastic anemia with the typical clinical manifestations and changes in the bone marrow and peripheral blood may be produced by a variety of toxic substances.[19] This so-called secondary aplastic anemia differs in no way clinically or histologically from the idiopathic form, which by many observers is regarded as also caused by irreversible chemical injury from an unrecognized source[21] or possibly actually representing the marrow of aleukemic leukemia. It is sometimes difficult to prove conclusively that an etiological relationship exists between the disease state and the potentially toxic substance to which the person is exposed.

In some instances, as is the case in the etiological relationship of benzol and its derivatives, arsphenamine, irradiation, trinitrotoluene, and a few others, the evidence is so overwhelming as to be conclusive.[19] There are varying degrees of susceptibility. Some persons react violently, others slightly or not at all. A native idiosyncrasy to a drug may exist or sensitization may develop after long exposure or repeated short exposures. The concentration or the total amount of the suspected agent may be an important factor in the development of the adverse reaction.

Any substance which contains the nitrobenzene radical should be regarded with suspicion;[3] and Smadel[16] pointed out the presence of this radical in the structure of chloramphenicol and warned of its possible toxic effect on the hematopoietic system.

In attempting to evaluate the role played by any suspected therapeutic agent in the production of toxic effects, it is necessary to consider the possible etiological relationship of the disease state being treated as well as the effects of other drugs being administered. The patient here reported upon was known to have had chronic glomerular nephritis for the preceding five years, but there was very little evidence clinically of progression of the renal disease. It is well known that anemia is a fairly common complication late in nephritis, more commonly with the advent of uremia. The exact mechanism is not clear, but a depressant effect on the hematopoietic system by retained toxic metabolites is considered most likely.[1] However, the development of an acute fulminating episode on the basis of preexisting renal impairment of the degree described would indeed be exceedingly unusual.

Another factor which must be evaluated in the present case is the hepatitis which developed approximately four weeks after treatment with chloramphenicol was begun. The list of chemical substances capable of causing liver damage is quite extensive, and among the aromatic compounds, nitrobenzene has been shown to possess this property. Clinically, the manifestations of hepatitis are the same whether the etiologieal factor be toxic or viral. Differentiation depends on the history and histological studies. Lichtman[10] stated that in non-fatal viral hepatitis the lesions are generally zonal in distribution and cell necrosis extremely rapid. Cellular reaction is non-leukocytic and periportal cellular infiltrates consist primarily of round cells and eosinophils. In toxic hepatitis, cellular necrosis is gradual; that is, more coagulative. The usual pattern of destruction is not zonal, because the poisonous agent attacks the entire lobule with equal severity, producing all stages of cellular disintegration. In regions which remain intact, the inflammatory reaction consists largely of neutrophils. Lepper and co-workers[9] produced histologic changes in the livers of mice and dogs by administering large doses of aureomycin, of terramycin and of chloramphenicol. Rich and co-workers,[14] in a report of a fatal case of aplastic anemia following chloramphenicol therapy, described scattered foci of liver necrosis noted at necropsy. As jaundice had not developed, they regarded the necrosis as a late event and they stated that foci of hepatic necrosis develop in some cases of marrow aplasia regardless of cause.

In a search of the recent literature no report of an instance of toxic hepatitis resulting from the therapeutic administration of chloramphenicol was found, and it seems quite likely that the patient in the present case had infectious hepatitis; both the clinical course and the histologic changes in the liver were entirely consistent with that condition—in fact were more suggestive of it than of primary toxic disease.

The possibility that hepatitis induced the bone marrow aplasia seems exceedingly remote, especially in view of the clinical course and histological observations. Post, Gellis and Lindenauer[13] in studies of the sequelae of acute infectious hepatitis in 114 patients made no mention of aplastic anemia.

In reviewing factors that might have caused the changes in the bone marrow, then, consideration must be given to chloramphenicol. It has been shown by repeated animal experiments that the subcutaneous injection of benzene will produce a depression of the bone marrow and concomitant reduction of the leukocytes in the blood to 200 or 300 per cu. mm., with complete absence of granulocytes.[8] Dietz and Steinberg[4] in a report on a study of the chemical composition of rabbit bone marrow in benzene poisoning stated the action of benzene on the marrow was to increase its water content and to decrease the amount of lipid, total and non-protein nitrogen and non-protein sulfur fraction.

In the past two years there have not been a great many reported instances of bone marrow depression following the use of chloramphenicol, but they seem to be on the increase. Volini and co-workers[20] reported the development of bone marrow hypoplasia in three patients treated with chloramphenicol for periods of nine to nineteen days during which the total amounts given were 26 to 53 grams. Granulocytopenia developed in all, with involvement of the erythrocyte element in one. All responded favorably when use of the drug was discontinued. Gill[6] reported the development of granulocytopenia in two infants treated with the drug. One of them received approximately 6 grams in 12 days and the other 2 grams in 2 days. Both recovered when use of the drug was stopped. Rich and co-workers[14] reported a case in which fatal aplastic anemia developed in a 63-year-old male who received 57 grams of chloramphenicol over a period of three months for a chronic urinary tract infection. Loyd[11] reported a case of fatal aplastic anemia following treatment with chloramphenicol intermittently over a period of one and one-half years for a urological disorder. The amount of the drug given was not stated. Two cases of aplastic anemia (one resulting in death) following prolonged use of chloramphenicol were reported by Wilson and co-workers.[22] Both patients received 2 grams weekly (one for 28 weeks and the other for 26 weeks) in treatment for chronic bronchopulmonary suppuration. Patterson[12] reported a case in which severe anaphylactic shock, which required heroic measures to overcome, developed a half hour after 500 mg. of chloramphenicol was administered.

In light of the clinical events, hematopoietic changes and necropsy findings in the present case and in the reports of other observers, the preponderance of evidence appears to incriminate chloramphenicol as a potentially noxious agent capable of inducing severe myeloid depression. In considering associated factors influencing the development of hematologic changes by this agent, length of administration and total dosage must be evaluated.

In the present case the patient received approximately 30 grams over a six-week period—less of the drug and in a shorter period than in any of the other three reported fatal cases. Certainly, thousands of patients have received larger amounts and for greater lengths of time without toxic effect. Gray[7] estimated the incidence of blood dyscrasia concomitant with chloramphenicol therapy at 1 in 400,000. It is worthy of note that in three of the four fatal cases the patients were taking chloramphenicol for a urological disorder. Does impaired renal function play a role in the production of toxic effects by the drug? One must consider the possibility that associated pathologic conditions complicate the disease for which chloramphenicol therapy is given. Possibly patients with impaired renal or hepatic function should not take the drug unless the hematologic effect can be very closely observed. Length of administration may be an important factor, but it would seem from the evidence in the present case that individual idiosyncrasy, or at least hypersensitivity, plays a more vital role.

Other observers[14, 20, 11, 22] have suggested frequent examinations of the blood during therapy with chloramphenicol and discontinuance of the drug at the first sign of depression in granulocytes, erythrocytes or thrombocytes.

In the case here reported the hemogram was normal when the patient entered the hospital and no chloramphenicol was given from that time on. At least in this instance frequent examination of the blood during therapy with the drug would seemingly have furnished little or no warning of impending events. It is regrettable that there was no examination of the blood between the time of admittance and the appearance of purpuric manifestations, two weeks after cessation of therapy with chloramphenicol. However, at that time the patient seemed to be making uneventful recovery from hepatitis and there was no suspicion of toxic effects from previous therapy.

From the standpoint of preventing or modifying the toxicity of benzene and nitrobenzene compounds, Shils and Goldwater[15] conducted some interesting animal experiments. They conclude that, from a practical nutritional point of view, special emphasis should be placed on eating well-balanced meals containing a good proportion of high quality protein and they expressed belief it is probably wise to keep the fat intake at moderately low levels.

It would certainly seem unwise to condemn a drug which has proven its effectiveness against a large group of infections, some of which entail a high degree of morbidity and mortality, merely because of the occasional occurrence of untoward effects. Many lives have been saved and much suffering and loss of time have been eliminated by the judicious use of some of the newer drugs in treating disease states, for which there had been previously no specific or effective therapy. If occasionally in such an instance, despite the observance of all known precautions, an untoward effect results from the therapy, it is regrettable but excusable.

ADDENDUM

Since this report was prepared there have appeared in the literature three papers with the accounts of eight additional deaths from aplastic anemia following therapy with chloramphenicol.[2, 17, 18] From the increasing number of reports of bone marrow depression associated with the use of this product, it seems mandatory that a definite stand be taken with regard to its employment in the future.

In the author's opinion, it should be prescribed only in those situations where the life of the patient is threatened and where no other type of therapy, with a less toxic potential, has proven to be effective. If all physicians using it are aware of its possible deleterious action, if self-medication by patients is prohibited, and if the blood is continuously scrutinized during use of the drug and for several weeks after it is discontinued, many of the dire results might be avoided.

SUMMARY

A fatal case of aplastic anemia following chloramphenicol therapy is reported, together with necropsy findings. The possible etiologic relationship of a preexisting chronic glomerular nephritis and coexistent hepatitis is discussed. Closer observation of the hematopoietic system during use of the drug is suggested.

655 Sutter Street.

ACKNOWLEDGEMENT

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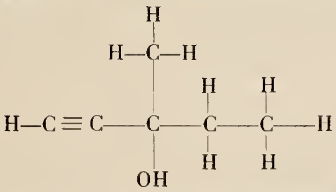
Acute Exfoliative Dermatitis Due to Dormison®

JAMES N. DeLAMATER, M.D., *Pasadena*

ALTHOUGH even good drugs have dangers and limitations, especially hypnotics which are in great popular demand, considerably more was written about Dormison® in the lay press for the general public than was available to physicians in medical literature when the drug was introduced for sale. In an exhaustive search of recent medical literature only two articles specifically relating to this drug were found, while between October and Christmas 1951, a rash of popular articles appeared in such magazines as the *Woman's Home Companion*, *Cosmopolitan*, *Collier's* and *Reader's Digest*.

Tertiary carbinols have long been known to produce central nervous system depression.[1] Margolin and co-workers[2] found that simple unsaturated aliphatic carbinols possessed a high degree of activity, satisfactory duration of action, and low toxicity. Methyl parafynol (Dormison) was considered one of the most promising of these unsaturated carbinols. Chemically it is 3-methyl-pentyne-ol-3 and its structural formula is:



$$H-C\equiv C-\overset{\overset{H}{|}}{\underset{\overset{|}{H}}{H-C-H}}\;\; \text{;}\quad H-C\equiv C-\underset{OH}{\overset{CH_3}{C}}-CH_2-CH_3$$

This compound is of considerable pharmacologic interest because the fate of the ethinyl group in body metabolism remains unknown. Inactivation of the drug depends upon destruction of this group.[3]

3-methyl-pentyne-ol-3 has a high selectivity of action. It is not analgesic. It is not anesthetic when administered intravenously in sublethal amounts. It does not appear to be antispasmodic. In contrast to the barbiturates and other hypnotics, even in large doses it does not depress respiration. Caffeine given parenterally causes rapid recovery from the deep hypnotic state caused by the drug and no undesirable after-effects have been observed in animals given overdoses of the drug. 3-methyl-pentyne-ol-3 was tested for chronic toxicity in rats and dogs with daily doses of 200 to 300 mg. per kilogram of body weight (approximately 70 times the recommended human dose). The amount of sugar in the blood, hemoglobin, the number of erythrocytes and leukocytes, and the leukocyte differential remained normal. Dogs had normal renal function when tested for phenolsulfonphthalein excretion.

Dormison is rapidly inactivated in the body. The content of the drug in the blood decreases rapidly although only small amounts are excreted in the urine. The drug is most rapidly inactivated by hepatic and renal tissue. Evanescence of the activity is associated with enzymatic modification of the ethinyl group.[2]

In a clinical study of 134 patients,[2] 3-methyl-pentyne-ol-3 was found to be an effective hypnotic without toxic effects, and free from undesirable side actions. The effective oral dose is 200 to 300 mg. No residual effect was reported on awakening. Some patients, given the drug for over six months, had no untoward symptoms. Before and after the drug was given, studies to determine the cell content of the blood and the amounts of urea nitrogen, creatinine, total serum protein, albumin, globulin, phosphorus, alkaline phosphatase, and cholesterol (free and combined) were carried out. The icteric index was observed and van den Bergh, thymol turbidity or cephalin flocculation tests were done. The urine also was examined before and after medication. No changes attributable to the drug were observed.

The following case appears to be the first reported of toxic reaction to Dormison.

CASE REPORT

The patient, a Caucasian woman 43 years of age, had redness and blistering of the skin, with a severe burning sensation, and pain in the joints. The condition had existed for three days.

On December 13, 1951, the patient, having read about Dormison in a popular magazine, obtained several capsules of it and that night took two of them for sleep. The next day mild transient itching and red spots on the skin developed. Again she took two capsules that night. The itching and redness were more severe the following day; but still she did not associate the condition with the drug, and at bedtime, because the itching and discomfort were intense,

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Presented before the Section on Allergy at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

she took three Dormison capsules for sleep. Next morning she was covered "all over" with a rash that "made her look like a boiled lobster," and numerous large thin-walled blisters had appeared over the face, arms, hands, chest, abdomen, buttocks, thighs and lower legs. The lips and tongue became swollen and there was pain in the wrists, elbows and knees. The patient called a physician, who hospitalized her immediately. She had taken no other drugs in more than sixty days.

Following are the abnormalities noted in a thorough physical examination. The skin over the entire body and face was intensely inflamed and thickened. There were numerous thin-walled bullae 2 to 3 cm. in diameter over the forearms, elbows, axilla, chest, buttocks, thighs and lower legs, as well as denuded areas where the bullae had ruptured and the superficial layers of skin had rubbed off. The scalp was red and swollen with an orange-peel appearance about the follicles. The eyelids were edematous and nearly closed and there was a small bulla on the left upper lid. On the tongue, which was swollen, were teeth markings. The lips were puffed, and inside the left cheek was a 2 x 4 mm. area of erosion. The right breast had been removed. Thickening of the uterine adnexae was noted but there were no palpable masses and no tenderness. Pain was present in the right knee but there was no evidence of accumulation of fluid.

The blood pressure was 120 mm. of mercury systolic and 80 mm. diastolic, the pulse rate 100 and respirations 20 per minute.

Laboratory data were as follows:

BLOOD EXAMINATION

	Dec. 17	*Dec. 20*	*Dec. 23*	*Dec. 30*
Hemoglobin (gm. per 100 cc.)	11.6	11.5	11.6	12.0
Erythrocytes per cu. mm.	4,060,000	4,030,000	4,050,000	4,380,000
Leukocytes per cu. mm.	5,050	6,200	6,400	6,700
Neutrophils	83%	75%	76%	73%
Immature	3	1	1	0
Stab	44	13	12	4
Segmented	36	61	63	69
Lymphocytes	12	13	15	22
Monocytes	3	10	7	5
Eosinophils	2	2	2	0
Platelets per cu. mm.	94,000	104,000	....	....
Sedimentation rate (mm. in 1 hour)	8	....	10	....
Bleeding time	3 min.	....	....	....
Clotting time	3 min.	....	....	....

URINALYSIS

Albumin	Trace	0	0	0
Sugar (gm. per 100 cc.)	0	2.25	0	0
Acetone	+	0	0	0
Diacetic acid	0	0	0	0
Microscopic (high power field):				
Leukocytes	15	4-5	2-4	2-3
Erythrocytes	10-15	0-1	rare	rare
Casts	0	0	0	0
Orthotolidine occult blood	3+	Trace	0	0

The diagnosis was dermatitis medicamentosa; Dormison sensitivity.

The patient was given 3 ounces of Fleet's phosphosoda at the time of admittance. Thereafter fluids were given intravenously. Corticotropin (ACTH), 25 mg. every six hours, was administered. A diet high in protein was prescribed and vitamins A and C were given in large doses. Penicillin in doses of 600,000 units daily was given prophylactically. As the denuded areas of the skin caused intense discomfort, the patient was given starch baths three or four times daily, and a starch bed into which pounds of dry sterilized corn starch was dusted daily was used.

It was hoped, at first, that the use of sedatives and analgesics could be avoided, for it was not known whether these compounds would exacerbate the condition. Demerol® finally was used in 100 mg. doses, however, without ill effect.

For two days following hospitalization the patient's condition became worse; more bullae formed and larger areas became denuded. On the third day, however, there was pronounced reduction in erythema and swelling, and bullae had stopped forming.

At 3 a.m. of the fourth hospital day, an acute psychotic episode developed, involving olfactory, auditory, and visual hallucinations. This was ascribed to the corticotropin therapy, and use of the drug was discontinued immediately.

Recovery thenceforward was rapid and uneventful and the patient was discharged from the hospital December 27 with a few small residual healing areas. By January 5, 1952, the skin was completely clear.

SUMMARY

A case of acute exfoliative dermatitis medicamentosa is reported in which the inciting agent appears to have been Dormison (methyl parafynol), the only drug the patient had taken for over sixty days preceding the illness. The disease followed ingestion of seven standard 250 mg. capsules of the drug.

127 North Madison Avenue.

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Salmonella Infection in a Premature Infant With Congenital Anomalies

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SALMONELLA TYPHIMURIUM, frequently the etiologic agent in cases of infectious diarrhea in adults and children, rarely is found in newborn infants.[1,2,3]

In the case reported here, S. typhimurium was isolated from a premature infant on the sixteenth day of life. Epidemiologic investigation revealed the probable source of infection. Complete atresia of the duodenum in this case is of added interest because of its possible role in delaying manifestations of infection and prolonging the period of incubation.

CASE REPORT

An infant who weighed four pounds at birth was admitted to the premature nursery of the Los Angeles County Hospital on the fifth day of life because of vomiting and refusal of feedings. Upon roentgen examination the stomach was observed to be distended with gas. Duodenal obstruction was diagnosed. Laparotomy was done on the sixth day of life and complete atresia of the duodenum above the ampulla of Vater and malrotation of the large intestine was noted. Duodenojejunostomy was performed.

The postoperative course was satisfactory until the eleventh postoperative day, the sixteenth day of life, when severe diarrhea was evident. Salmonella typhimurium grew

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on a culture of the stool. Dietary measures, supportive treatment and chloramphenicol therapy were instituted. Diarrhea gradually abated and no organisms grew on cultures of the stools.

The patient did not gain weight, however, and two weeks later had another episode of diarrhea, the cause of which was not determined. This responded to symptomatic treatment, but despite this, the infant did not gain weight and died on the 48th day of life.

Until the first attack of diarrhea the infant had been in the premature nursery under conditions of strict isolation in a well-managed nursery. He was taken to the operating room from the premature nursery and was returned to the premature nursery immediately after operation.

No other cases of infant diarrhea were observed in that nursery or on the same floor at that time or within the maximum incubation period of salmonellosis. Rectal swab cultures were taken on all the doctors, nurses and attendants who had handled the baby since admittance, including physicians and nurses who had carried out and assisted at the operation. All cultures were negative for salmonellae.

Members of the household into which the baby was born were examined and rectal swab cultures obtained from both parents and two siblings. S. typhimurium was recovered from the mother on three occasions. The infant was born at home where it remained five days and received formula feedings prepared by the mother, occasionally by the father.

After admittance to hospital, the infant was isolated and never in contact with family members. Therefore infection is most likely to have occurred at home during the first five days of life. The time elapsed from the last day at home to the onset of diarrhea was eleven days. Infection could have occurred at birth, which would make the incubation period sixteen days. The significance, in this regard, of the lack of continuity between stomach and small intestine cannot be ascertained. The incubation period usually recorded for endemic cases of Salmonellosis ranges from one to seven days, and in food-borne outbreaks from six to 48 hours.

SUMMARY

A case of Salmonella typhimurium infection causing severe diarrhea in a premature infant with complete atresia of the duodenum, surgically corrected, is presented. Epidemiological evidence indicated the mother was the source of the infection and placed the minimum incubation period at eleven days, the maximum incubation at sixteen days.

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California MEDICINE

EDITORIAL

Antiquated Industrial Fees

INDUSTRIAL MEDICAL and surgical fees, long a bone of contention in California, came again into the limelight last month, when an interim committee of the State Senate devoted particular attention to them. As a result, medicine had its first opportunity in years to present a review of the history of such fees and to point out the present predicament of the doctor in trying to obtain adequate payment for his vital services in industrial accident cases.

Oddly enough, the physician is recognized by all concerned as the keystone in handling all industrial accident cases but is nonetheless lightly brushed aside by all other parties when the value of his services is considered.

To the injured workman, the physician is the skilled practitioner who heals his injuries and restores him to full vigor and function; at the same time, the physician is treated as a "company man" who is ever ready to testify disparagingly on the workman's claim for compensation payments. To the insurance carrier, the doctor is a supplier of services which are bought in a competitive market, to the financial advantage of the corporation underwriting the risk. To the Industrial Accident Commission, the physician is a necessary element in each case but still a self-sufficient individual who must look to himself to secure just payment for his services. To the state Insurance Commissioner, the doctor is merely a bargaining agent whose demands for compensatory fees may result in increased premium rates for disability insurance.

This unenviable position has forced physicians to enter the bargaining market in an effort to obtain proper payment for their services. Now, for the first time, the doctors of California have available the type of economic information required for such bargaining.

Starting in 1950, a special committee of the California Medical Association went about a systematic program of studying the economics of industrial medical practice. Business indices, cost of living figures, wage bases and other economic factors were studied. The moral basis for setting industrial injury fees was considered, as were the historical facts in industrial practice and the common-sense factors in a system greatly enlarged since its beginning in 1914.

Out of these studies has come the realization, unbelievable to some and unacceptable to others, that industrial medical fees have lagged far behind the economic trends which affect all other fees and prices. The doctor handling industrial cases is, bluntly, being discriminated against in terms of economic justice.

Industrial fees, as stated in an official 1918 fee schedule, were based at that time on the fees which physicians might expect to receive from private patients with an average annual income of $1,250. With the average for all covered employees today at more than $3,700 annually, the doctor might expect about a 200 per cent increase in such fees. Instead, he shows about an 80 per cent increase.

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Is the physician's fee based upon his cost of operating his practice? If so, he is again from ten to twenty years behind the economic wave in his industrial fees. Is his fee based on cost of living figures? If it is, the industrial part of his practice is in the red.

The C.M.A. committee, armed with this information, has now come up against the bleak realities of trying to get official recognition of industrial fees in keeping with the times and the economic forces operating in all other parts of the industrial insurance picture. Between the Insurance Commissioner, the Industrial Accident Commission and the insurance carriers, the doctor is left to shift for himself, for none of them are willing to face up to the fact that industrial fees must be radically adjusted if they are to be made equitable and set at a level where the vast majority of California physicians can and will handle industrial accident cases.

Under this squeeze, the C.M.A. committee has suggested two possible moves. First would be the attempt to secure legislation placing the responsibility and authority for establishing an industrial fee schedule squarely in the lap of a state authority. Second would be the possible drafting of an adequate fee schedule which would be recommended for use by all physicians whether it did or did not carry the approval of any of the state agencies or the insurance carriers.

Both these suggestions are fraught with pro and con considerations. Both include elements which are not easily palatable to physicians. Both have inherent dangers which might bring about their failure. On the other hand, if bargaining across the table offers no more chance for success than has heretofore been demonstrated, radical alternatives may be indicated.

If justice to all is to prevail, common sense would dictate the objective consideration of this problem by all concerned, with a view toward a swift and equitable settlement with the least possible disruption of existing relationships.

1953 Annual Session

Precedent will be broken in the C.M.A. 1953 Annual Session, when the familiar four-day meeting will give way to a five-day program.

As now planned, Sunday and Wednesday, May 24 and 27, will be reserved for meetings of the House of Delegates, with no Association scientific meetings scheduled for either day. On Monday and Tuesday, both general and sectional meetings will be held, and on Thursday additional sectional sessions will convene. Wednesday will also be set apart for meetings of the other medical organizations, including heart, chest, industrial and other groups. The day will likewise be available for medical golfers, for visiting scientific and technical exhibits and for such other business as visiting members may have.

The proposed program will allow the House of Delegates more time for the transaction of its business, a sorely needed provision in light of the harried schedule presented to that body in recent years. It will also allow reference committees more time for hearings and deliberations and members of the House time to attend at least some of the scientific sessions. It will permit a more orderly scheduling of all sessions and, simultaneously, it will permit any member to attend the session for only four days without losing important programs if his own schedule is crowded.

In its augmented size, the C.M.A. for several years has faced the need for organizing its annual session on a broader basis, for the benefit of both business and scientific functions. The five-day meeting seems to be the answer.

C.M.A. INTERIM SESSION, DECEMBER 6-7

Mark Hopkins Hotel, San Francisco

SCIENTIFIC PROGRAM

Symposium on Burns

Present Concepts in the Treatment of Acute Burns—William A. Todd, Jr., Colonel, MC, USA, chief of surgical service, Letterman Army Hospital, San Francisco.

Fluid and Electrolyte Problems Relating to Burns—James Hopper, Jr., M.D., director of clinical laboratories, University of California Hospital, and assistant professor of medicine, University of California School of Medicine.

California
MEDICAL ASSOCIATION

NOTICES & REPORTS

The Health Needs of the Nation

L. A. ALESEN, M.D.,
President of the California Medical Association

Dr. Alesen was invited by The President's Commission on the Health Needs of the Nation to discuss the following questions, prepared by the Commission, at a regional meeting held in San Francisco, September 29, 1952.

1. What are the principal unmet health needs in this area?
2. What can be done to meet those needs?
3. How can prepaid medical care be best provided?
4. How much government in medical care?
    (a) Veterans Administration
    (b) For military dependents
    (c) Hospital construction
    (d) In the care of psychotics, tuberculous and the aged

Great stress is currently laid upon medical economics. It is contended that the cost of good medical care is so great that large segments of our people are unable to afford it, and therefore are deprived of their rightful opportunity to good health and well-being. Since medical economics is just one phase, albeit an important one, of the economic process in general, it would seem relevant to begin a discussion of the subject with some broad general observations on economic fundamentals and subsequently to apply such observations more specifically to the problem of good scientific medical care for every citizen in this country.

It has always been one of the prideful goals and traditions of American medicine to place within the reach of every individual in this country the best grade of medical care at a price that individual can afford to pay, whether that be a high fee, a low fee, or no fee at all. That this goal has in large measure been achieved is attested by the fact that the American people are the healthiest people in the world today, bar none, when comparable populations are considered. Further, under our system of the private and competitive practice of medicine as an integral part of the American system of profit and loss, we have made strides in our profession comparable to the marked developments in industry and business and for exactly the same reasons. The sulfa drugs, the antibiotics, improved techniques for diagnosis, anesthesia, surgical procedures, and the marvels of internal medicine find their current counterparts in electronics, jet propulsion, and atomic fission.

Economics is defined as the science of the production, the distribution and the consumption of goods and services; or a study of the way man makes his living. The ideal state of economic health would be an economy in which there are readily available the greatest amount and variety of goods and services to every individual living within the economy, at a price well within his reach and in an environment in which he finds encouragement to produce to his utmost, to consume, to distribute, and to accumulate the products of his labor. The fact that during the six thousand years of recorded history there have been a few instances in which this definition of the ideal economy has been met is significant. The fact that these instances have been short-lived and the

LEWIS A. ALESEN, M.D. . . . . President
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reasons for their termination have particular importance for this discussion.

History teaches one outstanding and never-failing lesson: Social and economic structures have been productive, strong, and expanding when group or government action has been limited to its appropriate biologic function—that of protection of the individual in the enjoyment and accumulation of the fruits of his labor. Under such social and economic organizations, individual responsibility has been paramount: *individual reward for individual merit; individual penalty for individual failure* have been recognized as inviolable. However, in practically all of the human societies, sooner or later the collectivist has insinuated his siren song of group action, and immediately thereupon the process of disintegration and decay has commenced. Historians tell us that there have been approximately 2,500 instances of the communistic or collectivistic state in the world's history, without a single instance of success unless one wishes so to designate present day Russia.

Over the past fifty years in America, because of the application of tools and the use of constantly improving techniques, our productivity has increased on the average of about 3 per cent per year. By and large, that increased productivity has over the years been well distributed. A few examples will show how well.

In Russia, under communism, the workman can buy one-third quart of milk with his hour's labor. In England, under socialism, he can buy three quarts. In America, under private enterprise, his hour's labor will buy him six quarts of milk. In Russia, under communism, the individual has available 40 square feet of housing. In England, under socialism, he has 105 square feet. In America, under individual enterprise, he has 410 square feet of housing. In Russia there is three-quarters of one telephone per one hundred persons. In Great Britain there are eight telephones. In America there are 22 telephones per hundred persons. In Russia, the workman can buy one-half pair of shoes for one week's work. The American workman can buy six pairs of shoes. The Russian workman can buy one-half suit of clothes for one month's work. The American workman can buy four suits of clothes. In the United States there are approximately eighty million life insurance and annuity policy holders with a total of approximately two hundred fifty billion dollars of such protection all developed under our competitive system. Over seventy million Americans have bank accounts.

With 6 per cent of the world's population, Americans enjoy 94 per cent of the television sets, 92 per cent of all bathtubs, 85 per cent of all automobiles, 54 per cent of all telephones, 48 per cent of all radios. Our 6 per cent of the world's people consume 65 per cent of the world production of corn, 60 per cent of petroleum, 60 per cent of wheat, 53 per cent of wool, 48 per cent of coffee, and 45 per cent of meat.

The American Federation of Labor compiled a report on comparative real wages just before World War II. This report stated that in America the workman's hour's work would buy him 3.8 market baskets of groceries; in Denmark 2.18; in Great Britain 1.8; and in Italy .96.

A proper question is as to whether or not the laboring man has in fact benefited by this increased productivity. This question is answered by figures recently released by Mr. Joe Hertel,[1] Farm Advisor, University of California College of Agriculture and United States Department of Agriculture, San Bernardino, which speak eloquently on this subject: "In 1929, the average wage earner in the United States received 56 cents per hour. In 1951 he received $1.60 per hour. In 1929 he had to work 47 minutes to buy a pound of round steak which required 41 minutes in 1951. He works 29 minutes now to buy a pound of pork chops for which he labored 39 minutes; 9 minutes to buy one quart of milk as compared to 15 minutes; 21 minutes to buy one pound of poultry meat in 1951 compared to 41 minutes in 1929; and, only 25 minutes to buy a dozen eggs for which he labored 54 minutes in 1929; and, he gets one pound of turkey for 22 minutes of work as compared to 55 minutes in 1929."

Just how much more might have been accomplished had we not during this period of time been impeded in our economic progress by all manner of government interferences as well as by the strictures interposed by sit-down strikes, featherbedding tactics, and sabotage?

Turning now to the application of fundamental economic principles to the problem of good medical care, it would first seem pertinent to determine just what portion of the American family budget is actually required for good medical care, and whether or not the average family is in fact being deprived of good care because of high cost.

In the year 1950, the American people spent eight billion dollars for all types of medical care, this representing 4.4 per cent of the $193,600,000,000 that they spent for all goods and services in that year.[2] Over the years, the outlay for medical care has varied from 4.1 per cent to 4.4 per cent as noted in 1950.

In 1950, the American people spent 5.8 per cent for recreation, such as football, baseball, and other spectator amusements, theater admissions, bowling, horse-racing. They spent 4.2 per cent for alcoholic beverages or only a trifle less than for all types of medical care. They spent 2.3 per cent of their budget on tobacco; 1.2 per cent on barber shops, beauty parlors, baths, massages, toilet articles and cosmetics; and 0.8 per cent on jewelry, clocks, watches, and their repairs. Thus, it would seem that, mathematically at least, the expenditure of three times as much for alcohol, recreation, and tobacco as for medical care would not justify the contention that medical care is out of the reach of the average citizen.

During the twenty years between 1930 and 1950, some variation occurred in the way our people spent their medical dollar. In 1930, the physician got 32 cents of it, now he receives 28 cents of it, an actual decrease of 12.5 per cent. In 1930, dentists got 16 cents out of the dollar, now they get 12 cents or 25 per cent less. In 1930, 19 cents of the consumer's medical dollar went for drugs, in 1950, only 17 cents, a drop of 10.5 per cent. Fourteen cents of the consumer's dollar in 1930 went to the hospitals whereas in 1950, 23 cents was so consumed, or an increase of 64.3 per cent. This is a marked increase but there are certain offsets and explanations of these figures which make hospital care not so high relatively as it would appear at first glance.

The cost of all goods and services purchased by consumers rose 72 per cent between 1930 and 1950.[3] On the same scale, hospital rates increased 135 per cent. but physicians' fees were up only 40 per cent, and surgeons' and specialists' charges up only 41 per cent.

During that same base period, the average weekly earnings of production workers in manufacturing industries rose 165 per cent.

Translating these facts into terms of real wages, that is, the purchasing power of the consumer's services in terms of medical and hospital services, some interesting conclusions are reached. In 1950, the individual needed to work only 53 per cent as long to buy the same amount of physician services as he was required to do in 1935 to 1939. Hospital charges in 1950 were high, but the patient could buy as much care as in the base period with only 89 per cent as much work.

In connection with hospital care, several facts are often overlooked. In the first place, for each patient in the modern hospital, approximately two and one-half employees are required, the payroll for labor alone thus constituting about 70 per cent of the hospital bill. Also, as is well known, hospital costs of food reflect in a large measure an important component of labor. During the past twenty years, something of a minor revolution has occurred in the efficiency of hospital bed use. Whereas twenty years ago the average hospital bed accommodated about twenty patients per year, now the same bed will care for approximately forty patients. In addition, the modern developments of earlier and better diagnosis, improved anesthesia, surgical and operating-room techniques, the use of antibiotics, sulfa drugs, transfusions, have all combined to get the patient out of the hospital more completely recovered in much less time. Therefore, the total expenditure for hospital care occupies a fairly favorable relative position. This same increased efficiency in the use of modern techniques in diagnosis and treatments has greatly enhanced the efficiency of the individual physician, it being estimated that each physician in 1950 rendered approximately 50 per cent more care than during the 1935-1939 base period.

On the question of the alleged shortage of physicians and the need to subsidize medical schools, it should be borne in mind that since this base period the population has increased about 17 per cent, whereas the number of physicians has increased by 22 per cent in the same period. Thus, statistically, the position of American medicine is on a very firm economic foundation. The well-known figures on rapidly lowering death rates and decreased morbidity in all of the major conditions with the exception of the degenerative diseases shows that the American people are in fact receiving the advantage of the improved techniques and have in fact not been barred by any alleged economic obstacle.

ANSWERS TO THE FOUR QUESTIONS

With more specific reference to your four questions, it is our belief in response to question number 1, that there are no major unmet health needs in this area. The State Chamber of Commerce is at this time conducting a survey to ascertain the extent to which the people of this state are covered by voluntary prepayment plans for the cost of medical care. It is our opinion that at least six million of the state's eleven million are so covered in some manner at least. Our own Blue Shield and Blue Cross plans together with the many excellent indemnity plans written by the private insurance companies have made and are making rapid strides toward removing the economic shock from illness. In this connection, notice should be taken of the excellent work done for the indigent patient in our large metropolitan centers by county hospitals, medical schools, and charity clinics, medical care being in many instances rendered without any charge whatsoever.

Some idea of the value of this care may be gained from the estimate made of the services rendered by members of the Los Angeles County Medical Association to the indigent sick at the Los Angeles County Hospital during the year prior to World War II. Using minimum fees as the basis of such estimate, the figure of fifteen million dollars for those services was estimated. When it is remembered that the total budgetary outlay for the institution for the year was six and a half million dollars, the value of these free services in comparison looms large if the taxpayer had been required to pay for them at the usual rates.

It is recognized that there are some rural areas where the health needs are not met with complete satisfaction although these gaps are being rapidly closed. Further, the problem of medical care for the migrant farm worker is a difficult one, and one that has not been solved completely as yet. There are many factors involved, not the least important of which is the irresponsibility of the workers themselves. The Committee on Rural Health of the California Medical Association is giving this whole problem careful study and is prepared to make constructive recommendations in the near future.

2. What can be done to meet those needs? Certainly an expansion of any and all legitimate and responsible plans for the voluntary prepayment of the costs of illness ought to be encouraged. Just as free and unrestricted competition in the life insurance and annuity field has resulted in the coverage of most of our citizens, so will the same type of enterprise produce the same salutary results in the field of voluntary health insurance provided too many roadblocks are not interposed.

However, a broader and more comprehensive answer to this question would seem to be in order. Just as the ideal economic state is one in which there is a maximum production and distribution of goods and services without artificial let or hindrance, so is the ideal system of medical care, and there is an inescapable relationship between the two subjects, for medical care is inseparably integrated in our system of profit and loss or free enterprise. If we are really sincere in our desire to give to the American people the best medical care at a price they can afford to pay, then we must recognize that government restrictions upon and intervention in the economic process in any manner whatsoever reduce the amount and availability of all goods and services. Price and wage controls, crop subsidies, agricultural allocations, rent control, all restrict the free flow of goods and services in such a manner as to deprive every citizen of the just and reasonable share to which he would be entitled if he were allowed to participate in a free economy unrestricted by any government order whatsoever except that required to protect him from the predatory activities of his fellows. Government manipulation of the currency, arbitrary abolition of the gold standard, and one hundred and one other capricious and unwarranted interferences with the economic and social freedom of the citizen all work toward a decrease of output and therefore a decrease in the availability of all the good things of this life, medical care being one of them. But this is heady wine, and of course far too strong a potion for our current voters who have been conditioned by forty years of indoctrination for the Welfare-Police-Slave State. It will take another forty or fifty years of hard work to return our country to any semblance of economic and social sanity.

3. How can prepaid medical care be best provided? This question is best answered by the foregoing statement. It is our belief that there is no place for compulsion in any of these programs. A word is in order concerning a difference of opinion which exists in the prepayment field, some advocating complete or full coverage and others partial coverage or indemnification.

In any form of voluntary prepayment of the costs of illness, the insured person must be thoroughly aware of the cost of the service and must be responsible for its intelligent and economic usage. Certain restrictions upon abuses, such as payment for the first two or three visits in any given illness, are essential. More recently, a type of deductible insurance comparable to that employed in the automobile field has developed. This would seem to offer great possibilities inasmuch as the average individual does not require aid in the payment of minor bills but only in the case of catastrophic illness.

4. How much government in medical care?

a. *Veterans Administration.* The medical activities of the Veterans Administration have always posed a serious problem to the private practitioner of medicine. Recognizing that at least 80 per cent of those now receiving care in the Veterans Administration hospitals are there because of non-service connected disabilities, it seems imperative that some means be provided whereby this unfair burden be removed from the shoulders of the taxpayer and its unfair competition be removed from the private practitioner of medicine. If the veteran with a non-service connected disability is in fact indigent and unable to pay for this care, he is quite properly the ward of his local city or county political unit and should receive care at its hands. If, on the other hand, he is not an indigent there is no reason why he should be occupying a bed and receiving care in a government hospital for a non-service connected disability.

b. *For military dependents.* It is believed that care can best be provided for military dependents by an expansion of the Blue Cross, Blue Shield, and private indemnity medical care plans.

c. *Hospital construction.* In many instances, the effect of subsidization by federal money through the Hill-Burton Act and/or state money has been so to increase the cost of such construction by the imposition of numerous and often unnecessary and illogical requirements, that the individual community benefits little if any from the subsidy. In addition, the community is often encouraged by the lure of such money which seems to be free, to build out of proportion to its needs and to find when the hospital is constructed that a white elephant is upon its hands with no means for its maintenance.

d. *In the care of psychotic, tuberculous, and aged patients.* At present, by far the greatest percentage of psychotic and tuberculous patients receive care in state or county institutions. This is not an ideal situation, but it is one which has seemed to develop as a matter of necessity. The present care of the aged in rest homes and sanitariums, and other makeshift domiciles is far from satisfactory. If we would remove from our economic system the present strictures to full production under which it labors, it ought to be possible in very short order so to increase our production throughout the economy as a whole as to provide under the private enterprise system ample care for all of these unfortunates. As proof of this, James F. Lincoln's "Incentive Management" is an excellent example of what can be done when private enterprise is really given an opportunity.

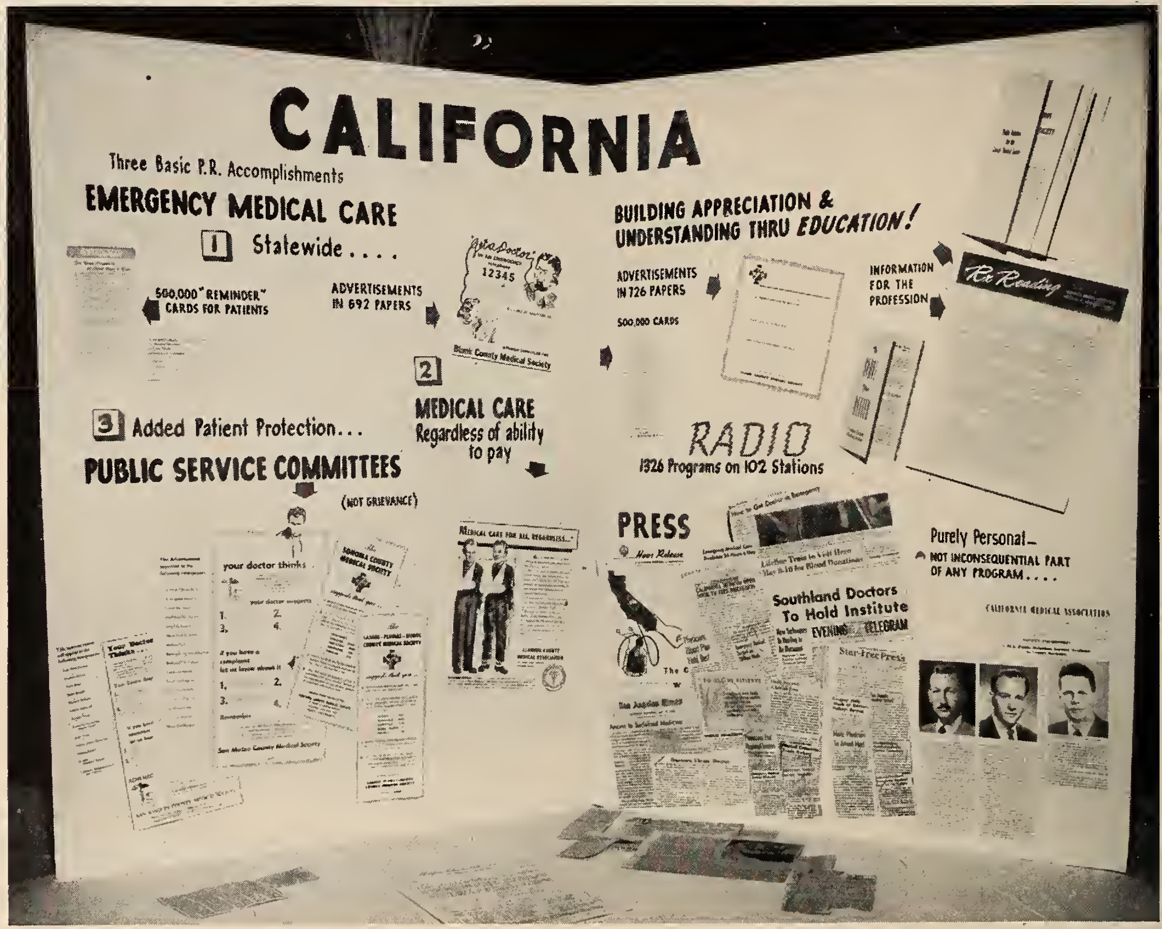
In view of the expansion of voluntary health insurance—in view of the expansion of hospital facilities in California in the last few years, coupled with the tremendous technical improvements that have shortened the duration of hospital stays and which have had the effect of doubling hospital capacity without increasing the number of beds—and in view of the number of physicians practicing in the state and their distribution, we submit that this area does not have any major unmet medical needs and there is no necessity or desirability for any additional federal legislation.

REFERENCES

1. Hertel, Joe, Farm Advisor, University of California College of Agriculture and United States Department of Agriculture, San Bernardino.

2. Dickinson, Frank G., *Bureau of Medical Economic Research of the American Medical Association,* M-56.

3. United States Bureau of Labor Statistics.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CALIFORNIA MEDICAL ASSOCIATION

PR on Parade— California's physicians received a fair share of recognition when this exhibit, pictured above, was viewed recently by some 250 medical society executives at the AMA's Public Relations Institute in Chicago. Prepared by the CMA's PR Department, it portrays medicine's accomplishments, statewide, in varied but related activities.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 24-28, 1953

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1952. (No exhibit shown in 1952, and no individual who had an exhibit at the 1952 session, will be eligible until 1954.)

Motion Pictures

At the coming annual meeting of the California Medical Association, to be held at the Biltmore Hotel, Los Angeles, May 24-28, 1953, approximately 100 motion pictures, on surgery and medicine, will be shown on the program of the Motion Picture Division.

The educational and scientific value of motion pictures has been proven by the large attendance at the Motion Picture Section during our previous meetings.

If you would like to present a motion picture film on this program, it is imperative that you submit your application before January 2, 1953.

Address all communications to:

ARTHUR E. SMITH, M.D., D.D.S.
Chairman, Motion Picture Division
California Medical Association
1930 Wilshire Boulevard, Suite 511, Los Angeles 5, Calif.

In Memoriam

Davis, Stanley S. Died in Oakland, September 13, 1952, aged 45, of myocardial infarction. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1932. Licensed in California in 1932. Doctor Davis was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

◆

Diepenbrock, Anthony B. Died in San Francisco, September 16, 1952, aged 64, of melanosarcoma. Graduate of Harvard Medical School, Boston, 1912. Licensed in California in 1912. Doctor Diepenbrock was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

◆

Dufficy, George W. Died in Sacramento, August 31, 1952, aged 80, of cerebral accident. Graduate of the University of California Medical School, Berkeley-San Francisco, 1898. Licensed in California in 1898. Doctor Dufficy was a retired member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

◆

Hyland, Clarence M. Died in Apple Valley, August 29, 1952, aged 66, of coronary thrombosis. Graduate of Creighton University School of Medicine, Omaha, 1916. Licensed in California in 1927. Doctor Hyland was a member of the Los Angeles County Medical Association, and the American Medical Association.

◆

Jones, Archie A. Died in Long Beach, September 20, 1952, aged 54, of coronary artery disease. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1927. Licensed in California in 1927. Doctor Jones was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

◆

Poole, Fenn E. Died in an automobile accident in Los Angeles, September 21, 1952, aged 46. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1932. Licensed in California in 1932. Doctor Poole was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

◆

Saeltzer, Dudley V., Jr. Died in Sacramento, September 13, 1952, aged 46. Graduate of the University of California Medical School, Berkeley-San Francisco, 1931. Licensed in California in 1931. Doctor Saeltzer was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

◆

Silverman, Dora J. Died June 14, 1952, aged 61. Graduate of National University of Arts and Sciences Medical Department, St. Louis, Missouri, 1914. Licensed in California in 1922. Doctor Silverman was a member of the Los Angeles Medical Association, the California Medical Association, and the American Medical Association.

Q. & A. on C. P. S.

Question: Recently, in the case of a patient who was referred to me by another physician, I noticed that C.P.S. had deducted the first two visits when payment was made for my services. This does not seem right in view of the fact that the patient had been seen two or three times by the first (referring) physician.

Answer: As stated in the question, this situation appears to indicate an error on the part of C.P.S. However, it is likely that the C.P.S. error resulted from an incomplete billing having been submitted by the physician.

When a case is referred from one physician to another, this should be indicated in the space provided on the C.P.S. billing form. Otherwise, C.P.S. has no knowledge of the referral and, consequently, might easily make the error of deducting the first two visits from the payment made to the second physician.

Question: Is it always necessary to have the patient fill out the top portion of the billing form?

Answer: No, this is not mandatory, although it is certainly advisable as a means of determining whether the patient is over or under the C.P.S. income level. In some instances, the physician may already know the patient's income status and thus does not need the information. If there is any doubt about the income, however, the patient should be asked to complete the top portion of the billing form; and it should always be done in case of new patients.

Question: As a radiologist I do referral work under the Veterans Program for other physicians. I have been unable to obtain payment recently in several cases although, apparently, the veteran was eligible for treatment.

Answer: The attending physician should request the service in advance and wait for his authorization and referral form prior to sending the veteran to your office. The veteran should present the referral form to you. It specifies the procedure and the fee that will be paid by the Veterans Administration.

It is important in order to obtain payment that this service be performed within the period of time stated on the referral form. Payment cannot be obtained if service is not requested by the attending physician or authorized by the Veterans Administration. C.P.S. cannot obtain payment if the services are not performed within the prescribed period. A medical report should be submitted with the billing.

In emergencies, or where there is a need for prompt treatment, the Veterans Administration will accept collect telephone calls and give verbal approval for the procedure if the veteran is eligible.

Question: Do C.P.S. fees for surgery include any payment for preoperative care or visits?

Answer: No. C.P.S. benefits under the surgical contract *begin at the time surgery is performed.* Consequently, any services rendered prior to the time of surgery are not included in the fee for surgery. Instead, they are payable under the patient's medical coverage, if the patient has medical coverage and if the services are benefits of the medical contract. If the patient does not have medical coverage, or if the services are not covered by the medical contract, the physician should bill the patient for preoperative care.

Question: Should a physician's bill for C.P.S. work be submitted each month, even if treatment of a patient is not completed and will continue into the next month?

Answer: Yes, bills for C.P.S. work should be submitted monthly—without regard to whether the services rendered to a particular patient are completed.

A separate billing is required for each patient, even for members of the same family; and all bills should be submitted to C.P.S. by the 15th of the month in order to expedite payment.

Question: Do all C.P.S. members have their own C.P.S. identification cards?

Answer: No. Two cards are issued to each beneficiary member and both bear the name of the beneficiary member. One card is for use by the beneficiary member, the other for use by the dependents. The coverage which the beneficiary has is indicated by code numbers which appear in the squares under the heading "beneficiary." Coverage for dependents is indicated by code numbers which appear in the squares under the heading "dependent." Explanations of code numbers in terms of coverage are provided in the Physician's Manual.

Question: What fee schedule is now being used by C.P.S.?

Answer: The fee schedule under which payments to physicians are made is the one dated September 1, 1949.

(In 1951 a proposed fee schedule was distributed to physicians for their consideration. However, this schedule is not in use and should not be used by physicians in billing or in determining what the C.P.S. payment on a particular service will be.)

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Ergo A. Majors of Oakland recently was honored at a dinner at the Claremont Country Club for completion of 50 years of practice. Graduated in 1902 from Toland Medical College, Dr. Majors passed the first examination to be given by the California State Board of Medical Examiners.

Dr. Albert Meads was toastmaster at the dinner, and speakers were Joseph Knowland, publisher of the Oakland *Tribune*, Dr. Cyril J. Attwood, president of the Alameda-Contra Costa Medical Association, Dr. John Sherrick, and Dr. Gerald Crenshaw.

LOS ANGELES

Dr. Ian Macdonald of Los Angeles, who served during the past year as vice-president of the California Division of the American Cancer Society, recently was presented with the Society's national medal for distinguished service in the field of cancer control.

* * *

Almost 500 physicians attended the fourth annual **post-graduate assembly** sponsored by the staff of **St. John's Hospital,** Santa Monica. Out-of-state speakers at the three-day meeting, held September 8-10, were Dr. Oliver Cope, professor of surgery at Harvard Medical School; Dr. Stewart Wolf, head of the department of medicine, University of Oklahoma; Dr. W. A. D. Anderson, professor of pathology at Marquette University, and Dr. Leo Rigler, professor of radiology at the University of Minnesota.

The program was arranged by Dr. John C. Eagan, director of the postgraduate assembly.

* * *

Appointment of **Dr. John Gardner** as health officer for the Bellflower Health District was announced recently by Dr. Roy O. Gilbert, Los Angeles County health officer.

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Dr. Percy Grover of Van Nuys was elected Surgeon General of the Veterans of Foreign Wars at the 53rd National Encampment of the organization. He had served three years as surgeon of VFW in California.

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An organizational meeting of the Southern California District Branch of the **American Psychiatric Association** will take place Friday, November 14 at 8 p.m. at the Institute of Aeronautical Sciences, 7660 Beverly Boulevard, Los Angeles. All A.P.A. members are cordially invited to attend.

SAN DIEGO

Appointment of **Dr. Berenice I. Stone** as a member of the California State Board of Social Work Examiners was announced recently by Governor Earl Warren.

Dr. Werner Lehmann, who recently completed an 18-month tour of duty in the Army, has resumed practice in San Diego. Before he entered the Army he practiced at Hotel del Coronado.

SAN FRANCISCO

Grants totaling $20,129 to support eleven **consultative tumor boards** in nine San Francisco hospitals were awarded recently by the county branch of the American Cancer Society. The recipients and the amounts each received: San Francisco Hospital, $3,660 for two boards; University of California Hospital, $4,120 for two boards; Stanford Hospital, $2,902; Mt. Zion Hospital and French Hospital, $1,500 each; Mary's Help, $1,400; St. Mary's, $1,327; St. Luke's, $1,320; St. Joseph's, $1,200.

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Stanford University Medical School has established a new position in its Department of Public Health and Preventive Medicine for an assistant professor of statistics. Lincoln E. Moses, Ph.D., has been appointed to the position and will serve half-time in the School of Medicine and half-time in the Department of Statistics in the School of Humanities and Sciences. Dr. Moses will participate in the teaching of the medical students, working toward the integration of statistical reasoning and methods in all of the departments but will devote himself primarily to consultations on evaluation and interpretation of observations in research, and the design of experiments, for divisions in the Medical School.

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The 1952 American Cancer Society Award for distinguished service in cancer control was received jointly by **Dr. Herbert F. Traut,** professor of obstetrics and gynecology in the University of California School of Medicine, and **Dr. George Papanicolaou** of Cornell University. Dr. Papanicolaou was cited for discovery of the exfoliative cytologic method of detecting the presence of cancer, and Dr. Traut for "collaboration in the demonstration of the clinical significance" of the method and for having "substantially reduced the interval between discovery and general application."

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Dr. Robert Wartenberg, clinical professor of neurology, University of California School of Medicine, has been elected a corresponding member of the German Society of Neurology.

SAN MATEO

Sequoia Hospital recently received American Medical Association approval as a hospital for residency training for general practice. The hospital had previously been notified it was qualified to provide residency training for nurses and administrative personnel.

STANISLAUS-MERCED-MADERA

Dr. Robert J. Garbarino has been appointed director of the Ahwahnee Sanatorium in Madera County which is operated jointly by Stanislaus, Merced and Madera counties. He had been acting director since July 1 when Dr. Gordon A. Diddy resigned the post to become director of tuberculosis control for Fresno County.

TULARE

Dr. Erwin P. Brauner, formerly of Long Beach, became Tulare County health officer September 1. He succeeded Dr. Wayne Powell, who was inducted into the armed forces.

POSTGRADUATE EDUCATION NOTICES

COLLEGE OF MEDICAL EVANGELISTS

Part-time Refresher Courses 1952-1953

Anesthesiology (4 months). Full time. Vacancy occurs each two months. Facilities limited to two students. Tuition: $300.00. Dr. Forrest E. Leffingwell and associates.

Genito-Urinary Diseases. Daily: 10:00 a.m. to 2:00 p.m., Nov. 17 through 21, 1952. Tuition: $60.00. Classes are conducted at the Ambassador Hotel, Los Angeles, under the auspices of the Los Angeles Urological Society.

Surgical Diseases of the Peripheral Vascular System (8 periods). Tuesdays: 7:00-8:30 p.m., Jan. 6 through Feb. 24, 1953. Tuition: $30.00. Dr. Carl H. Talmadge and associates.

Differential Diagnosis of Internal Diseases (12 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital. Jan. 6 through March 24, 1953. Tuition: $50.00. Dr. Julius Bauer.

Diseases of the Chest (2 days). Thursday and Friday, Los Angeles County Medical Association. Jan. 22 and 23, 1953. Tuition: $15.00. Lecturers to be announced.

Dermatology (12 periods). Wednesdays: 8:00-9:30 p.m., Jan. 7 through March 25, 1953. Tuition: $40.00. Dr. Clement E. Counter and associates.

General Urology (9 periods). Wednesdays: 8:00-9:30 p.m., Jan. 7 through March 4, 1953. Tuition: $35.00. Drs. Roger W. Barnes, R. Theodore Bergman, and associates.

Proctology (10 periods). Thursdays: 8:00-10:00 a.m., Jan. 8 through March 12, 1953. Tuition: $50.00. Dr. Malcolm R. Hill and associates.

Otolaryngology (8 periods). Tuesdays: 8:00-9:30 p.m., Feb. 10 through March 31, 1953. Tuition: $30.00. Dr. H. James Hara and associates.

Histology and Histopathology of the Eye (15 periods). Wednesdays: 7:30-9:30 p.m., Feb. 25 through June 3, 1953. Tuition: $60.00. Dr. I. G. Sommers.

Varicose Veins (6 periods). Tuesdays: 7:00-9:00 p.m., March 3 through April 21, 1953. Tuition: $25.00. Dr. Carl H. Talmadge and associates.

Gynecology (10 periods). Wednesdays: 8:00-9:00 a.m., March 25 through May 27, 1953. Tuition: $30.00. Dr. Dell H. Haughey and associates.

Operative Surgery (8 periods). Tuesdays: 7:00-9:00 p.m., April 7 through May 26, 1953. Tuition: $150.00. This course in operative surgery will be a combined lecture and laboratory course designed to provide opportunity for the student physician to personally perform standard major operations. Dr. Harry A. Davis.

Endocrinology (8 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital. April 7 through May 26, 1953. Tuition: $30.00. Dr. Julius Bauer.

Thoracic Surgery (8 periods). Wednesdays: 8:00-9:30 p.m., April 15 through June 3, 1953. Tuition: $30.00. Dr. Lyman A. Brewer.

Minor Orthopedic Surgery (8 periods). Thursdays: 8:00-9:30 p.m., April 16 through June 4, 1953. Tuition: $30.00. Dr. Alonzo J. Neufeld.

Diseases and Injuries of Bones and Joints. Full time. July 6 through 31, 1953. Tuition: $100.00. Drs. G. Mosser Taylor, Alonzo J. Neufeld, and associates.

Contact: For further information, write Chairman, Section on Graduate and Postgraduate Medical Education, College of Medical Evangelists, 312 North Boyle Ave., Los Angeles 33, Calif.

GENERAL

The sixth annual meeting of the **Western Society for Clinical Research** will be held January 30 and 31, 1953, at Carmel, California.

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The 19th annual meeting of the **American College of Chest Physicians** will be held at the Hotel New Yorker, New York City, May 28-31, 1953. Physicians who wish to present papers at the meeting should submit titles and abstracts to Dr. Arthur M. Olsen, chairman of the Committee on Scientific Program, American College of Chest Physicians, Mayo Clinic, Rochester, Minnesota.

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Outstanding leaders in medicine and medical education will be featured on the program of the 1952 annual session of the House of Delegates of the **Student American Medical Association**, December 29-30, at the Sheraton Hotel, Chicago.

Dr. Walter C. Alvarez, Chicago, will speak December 30 on "The Disappearing Art of Diagnosis with the Eyes and Ears." Dr. John Van Nuys, dean, Indiana University School of Medicine, will be the principal luncheon speaker the same day, discussing "A Dean and His Problems."

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The Joint Meeting of the **California Society of Pathologists** and the Southwestern Region of the College of American Pathologists will be held in San Francisco, December 6-7, 1952, in conjunction with the Semi-annual Slide Conference sponsored by the Cancer Commission of the California Medical Association.

INFORMATION

Income Taxes—Division of Fees

A RECENT RULING by the Bureau of Internal Revenue regarding the taxation of fees that are divided amongst two or more physicians has only partial application in California owing to the "anti-rebate law" in effect in this state.

Briefly, the Bureau of Internal Revenue has ruled that physicians may deduct from their taxable income payments they make for "professional assistance" in conducting their practices, and that likewise physicians may deduct as a business expense payments made to other physicians as compensation for referrals; *provided* that the payment of such "referral fees" does not "frustrate sharply defined national or state policies . . ." In this regard, the Bureau ruling follows the law laid down by the U. S. Supreme Court in *Thomas B. Lilly case,* where it was held that an optical company could deduct rebates paid to physicians who prescribed eye glasses and who referred their patients to the optical company. A major consideration in the U. S. Supreme Court decision permitting the deduction as a business expense of eye glasses rebates was that in the state in which the rebates occurred the rebates were not illegal.

In this connection it must be pointed out that, in California, Sections 650-654 of the Business and Professions Code expressly prohibit the payment or receipt of any unearned consideration or rebate "for referring patients . . . to any person . . ." Therefore, in California it is illegal for one physician to pay another a portion of a fee collected solely as a reward to the physician receiving the payment for having referred a patient to the physician making the payment.

Hence, the recent Bureau of Internal Revenue ruling will not apply in California insofar as "referral rebates" are concerned; such rebates or payments, being in violation of state law, will not be a deductible business expense.

On the other hand, the first part of the Bureau of Internal Revenue ruling to the effect that payments made by physicians to other physicians as compensation for work actually performed are deductible business expense, will apply in California, because our "anti-rebate law" does not apply where the payment is made for services rendered rather than for the act of referral.

California Physicians and Civil Defense

Prepared by Medical and Health Services, State Office of Civil Defense

IN ATTEMPTING to present a view of the medical and public health part of civil defense plans there is, on one hand, the risk of assuming too little familiarity with the subject on the part of physicians and workers in fields allied to medicine—this assumption resulting in a seeming, although unintended, insult to their intelligence—and on the other hand there is the equally likely fault of over-assumption of knowledge with the result that the presentation will not easily be followed or understood. Apologies are therefore offered at the outset for either or both of these offenses.

The California State Civil Defense and Disaster Relief Plan is based upon the California Disaster Act of September 15, 1945, and the Civil Defense Act of October 2, 1950.

The Director of Civil Defense of California, in transmitting the plan to the Governor, pointed out that it is "advisory in character to political subdivisions below state level, in recognition of their autonomy" but that adherence by these subdivisions "to the basic organizational structure and procedures set up will provide the uniformity and standardization essential" to an effective working of the plan in the event of a disaster.

The Governor, in his foreword to the publication of the plan, stresses that it "is based upon the fundamental precepts of civil defense—self-help and mutual aid. It preserves the historic autonomy of the community, but pledges the entire resources of the State in the event of emergency beyond the capabilities of a single community or a group of communities banded together for mutual assistance. Its success depends upon thorough and intelligent planning and full cooperation at all levels of government."

The Medical and Health Services organization and effort are, of course, but a part—a vital part—of the over-all state plan which includes such other—and all of them interrelated, variously interdependent—services as: welfare and evacuation, communications, transportation, utilities, engineering, supply, fire, radiological defense, law enforcement, training and public information services.

The plan assumes:

(a) that war may involve enemy action against the civilian population and property,

(b) that sabotage is a major enemy policy and capability,

(c) that atomic weapons will be employed against the most strategic installations and densely populated areas,

(d) that evacuation of elements of population centers will occur only when there is a threat of sustained heavy enemy air attack or invasion in force.

The total plan is based on the worst combination of disaster circumstances that can reasonably be expected; almost the worst that can be imagined. We all know what can happen to "best laid plans," but if we look upon this plan as a form of insurance to protect the lives and health of the people of California, we need not regret any eventuality that will have made the plan excessive in relation to reality any more than we should regret expenditures on life insurance, car insurance, or fire insurance or fire precautions just because we didn't die or become involved in a collision or because our house was only partially burned down or didn't even have a fire. The plan is adaptable to peacetime disaster as well as to war conditions. In time of war it would contribute greatly to the war effort by saving the lives and conserving the manpower that produces the war potential.

The fundamental problem is the quick expansion of existing medical and public health resources in time of disaster to meet the task of caring for casualties in numbers multiplied many times beyond the capacity of our present resources, and to maintain or restore under the temporary disruption of normal sanitary service and the sudden displacement of possibly hundreds of thousands of persons in the state, the safeguarding of food, milk and water and the employment of other measures to prevent the spread of communicable disease.

An atomic attack will mean a quick overflow of the entire present hospital bed capacity of the state, requiring the immediate establishment of auxiliary hospitals in the vicinities of existing hospitals to provide their additional bed-needs, and of large numbers of improvised hospitals to supplement existing hospitals, in a variety of buildings, such as schools, hotels, motels, universities, and apartment buildings in locations surrounding the stricken areas.

An attack will call for the services of every workable doctor, dentist, nurse, pharmacist, technician, veterinary and mortician in the state, besides the special and limited services of those doctors and nurses who through reasons of health and age are only partially workable. Also, it will call upon many thousands of non-professionals for the work of litter bearers, aides, ambulance drivers, clerical and many other forms of help.

Estimates of casualties, including destruction of medical personnel, and of property damage including destruction of metropolitan hospitals and facilities, are based on what actually happened in the two Japanese cities from two atomic bursts. Since the time of those two bursts a great many American medical minds have been occupied with studies as to what would happen to the populations of American cities similarly attacked; what would happen with no preparation or planning and, as was the case in Japan, no knowledge of how radiation victims could be rescued and radiation fatalities greatly reduced.

Important lessons have come from the war experiences in England where civil defense medical and health organization turned the early chaotic condition into one of great efficiency and smooth order. Even with the conventional "pre-atomic" bombs and rocket bombs that were rained on England there was seen the instant need for a thorough organization of medical and health effort in England and, once it was developed, everyone saw its importance and necessity. In one night, in Coventry, in 1940, bombs killed 22,000 and injured 28,000 persons. Civilian casualties treated at first-aid posts and first-aid mobile units in all of England throughout the entire war amounted to 165,000 persons. But that number would be exceeded in one day in Los Angeles or San Francisco by the dropping of one atomic bomb. This comparison gives some indication of the difference in magnitude of the medical job and the need for civil defense organization in any future war.

This lesson has led, in every city and region of the United States, to a growing force and volume of planning and preparation, all aimed at the goal of minimizing human loss both from casualties in possible bomb areas and from the gathering toll of disease and strain that would follow upon the sudden displacement of enormous numbers of our citizens.

If a task of this magnitude is to be faced realistically, and if the plan, therefore, is to envisage the pressing into service of every unit of medical manpower in the state and the use of every conceivably available item of equipment and facility plus the stockpiling in strategic storehouses of all materials that would be of vital need, then the plan must be statewide with a certain amount of coordination at the center and with a great deal of cooperation and hard work throughout the whole medical structures of the local regions.

This effort must, and does, include such items as:

(a) A survey of all available resources (personnel, supplies, present facilities).

(b) The allocation of available resources under a plan that sees attacked areas helped by the neighboring unattacked areas.

(c) Alternate medical teams to fill the gaps caused by death, injuries and displacement of individuals of present teams.

(d) Agreements for mutual aid.

(e) Selection of auxiliary facility sites.

(f) A "spot map" of existing and auxiliary facilities.

(g) Measures for detection and prevention of spread of communicable diseases.

(h) An adaptation of food, milk, and sanitation practices to fit disaster needs.

(i) Nutrition problems in emergency rations.

(j) Mental hygiene measures in the control of panic and to meet psychological warfare.

(k) Establishment of a record and reporting system.

(l) Maintenance of vital records in the listing, identification and disposition of the dead, with notification of the next of kin.

(m) Training and public information.

(n) Radiological defense, which is so highly specialized as to require a special organization, closely allied to, closely cooperating with the medical and health service, but necessarily separated from it in organization.

Coordination from regional and state levels, both in planning and operation, is, by the very nature of the effort, an inescapable part of a medical and health program for civil defense. To some few members of the medical and allied professions, as well as to some in all other walks of American life, the word "coordinator" has come to have an unsavory connotation, perhaps not wholly undeservedly; it has become a frightening word and, to some few, a fighting word. In speaking of civil defense planning to date, there has been some reference to the "confusion at the top and apathy at the bottom." Both confusion and apathy are regrettable in any part of the structure; neither can be denied; both of them, to the extent that they exist, are such natural human imperfections as to call for no explanation or discussion.

As we emerge from the blueprint stage—and we have well emerged from it—the element of confusion is in a satisfying state of decline and apathy is being replaced by an awakening interest.

As we pass from the talking and paper stage of placing orders for supplies and equipment to the stage of filling storehouses with them—a condition now being realized—and as we pass from nebulous hypothetical medical team organizations and facilities into actual specific set-ups—another condition now in realization—we have reason to hope that we are indeed approaching closer to a goal of medical preparedness. Except for the supplies and the training, everyone's deepest hope is that the whole thing can remain forever on paper.

What can those of the medical and allied professions do about it right now? They can put themselves on more familiar terms with the plan by certain readings. They can join up with units and attend meetings of groups that fit the closest to their individual capabilities and circumstances.

They can be well guided in this by their county medical societies, each of which has a committee for civil defense. Each county medical society has contact with the California Medical Association's Emergency Medical Service Committee, whose duty and desire are to assist and encourage the local county medical groups in civil defense planning. This committee is represented on the Medical Advisory Committee of the Disaster Council for the State of California and cooperates with city and county and state health departments.

Among the items of suggested reading are the two articles by Dr. Justin J. Stein in CALIFORNIA MEDICINE of November 1950 and January 1952, respectively, and the editorial "Civil Defense — An Urgent Medical Problem" in the same journal, December 1950.

Also for recommended reading, study, and reference, there should be listed:

(a) Medical Aspects of Atomic Weapons—Bulletin of the Los Angeles County Medical Association, September 7, 1950.

(b) Civil Defense Against Atomic Attack—U. S. Government Printing Office.

(c) Manual for Organization, Training and Operation of First-Aid Stations, recently issued by the Division of Medical and Health Services of the California State Office of Civil Defense.

(d) Plan for Existing, Auxiliary, and Improvised Hospitals—now on press and shortly to be issued by the California State Office of Civil Defense.

(e) Plan for the Blood Program under Disaster Conditions — Federal Civil Defense Administration —U. S. Government Printing Office.

THE PHYSICIAN'S *Bookshelf*

COWDRY'S PROBLEMS OF AGING—Biological and Medical Aspects—Third Edition. Edited by Albert I. Lansing, Ph.D., Washington University, St. Louis, the Williams and Wilkins Company, Baltimore, 1952. 1,061 pages, $15.00.

The third edition of the most authoritative treatise on the biology of aging brings to this important subject new and cogent information for the gerontologist. This is an essential volume for all physicians, not even excluding the pediatrician, because of its basic descriptions and data concerning fundamental problems of growth, development, and senescence. Here is assembled information concerning the comparative physiology and biochemistry of the mammalia, which is pertinent to the most important problems dealing with the finiteness of these species. Man is destined to age at rates characteristic for his type and conditioned by his hereditary legacy. The factors which influence the progress of this inevitable deterioration in an infinite universe are discussed with the wisdom, detachment and objectivity characteristic of philosophers who deal abstractly with a thesis. This book offers for the physician what the concept of rejuvenation might offer for those who feel that rejuvenation would supply them with a vigor beyond that which they might achieve as the natural consequence of experience and aging. The third edition differs considerably from the preceding editions; it does not supplant them, it embellishes them. It adds to the basic discussions those arguments and data which demonstrate that the concept of the aging process is not only one of constant evolution, but one in which active research is both simplifying and complicating the problem with the assurance ultimately of greater comprehension. A very valuable book which must be read to be appreciated, and an important addition to the library of a physician.

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SYNOPSIS OF GENITO-URINARY DISEASES—Fifth Edition. Austin I. Dodson, M.D., F.A.C.S., Professor of Genito-urinary Surgery, Medical College of Virginia; and Donald L. Gilbert, M.D., Instructor in Urology, Medical College of Virginia. The C. V. Mosby Company, St. Louis, 1952. 313 pages, $4.00.

The Fifth Edition of Dodson and Gilbert, "Synopsis of Genito-urinary Diseases," is an excellent, concise and inexpensive book on urologic diseases. This volume, only slightly changed from the previous editions, has been prepared for the medical student or as a handy reference for the general practitioner. It is a small, easily handled book, having a good index, and covering a surprising number of subjects in a brief but adequate manner. There are chapters on urologic diagnoses, cystoscopic instruments, the need for cystoscopy, anatomy of the genito-urinary tract, and a discussion of most of the common diseases seen by the urologist.

This is a valuable book and will make a desirable addition to the library of the man practicing general medicine or surgery.

THE TOXEMIAS OF PREGNANCY—Second Edition. William J. Dieckmann, S.B., M.D., Mary Campau Ryerson Professor and Chairman of the Department of Obstetrics and Gynecology, University of Chicago. The C. V. Mosby Company, St. Louis, 1952. 710 pages, 85 illustrations, $14.50.

This is an extended version of the first edition, which appeared in 1941, and includes in the 200 added pages at least brief reference to practically everything which has been written regarding toxemias in the last decade. To readers of the previous edition it may be said that the revision is a similar encyclopedic recitation of facts and figures, put together without much transitional phraseology or topical organization, all of which makes for tiresome and difficult reading. However, practically everything pertaining to the subject has been set down, and no doubt those who are actively delving into the mysteries of the toxemias will be delighted to find so much compressed into 700 pages.

As in the first edition, the various chapters are grouped into six sections, the first of which deals with four somewhat unrelated phases of the situation, namely, history, classification, geographical distribution, and pathology. This is followed by a lengthy exposition concerning the almost endless array of physicochemical determinations which have been so popular with investigators in this field but which have yielded so little of lasting value to the clinician. Additional pathologic items, as well as an endocrine chapter, are thrown in with the physiologic material. Section III is concerned with the etiology of eclampsia, but regrettably the reader is not rewarded by finding here any concise presentation of the author's current views on the sequence of events leading to the classical clinical picture of eclampsia.

The next two sections are devoted to the clinical aspects of toxemia and to its treatment. The material on therapy is unnecessarily confusing and repetitious, owing to the separate considerations of convulsive and non-convulsive toxemia. The final section deals with maternal and fetal mortality and also with prenatal care—a subject which might be disposed of briefly earlier in the book. The last two pages of the text will be passed over quickly by the research worker, but should prove to be of particular interest to physicians in California where malpractice insurance rates are soaring to astronomical heights. These pages describe certain legal pitfalls which have trapped unwary obstetricians, although some of the examples quoted seem to have little or nothing to do with the subject of toxemia.

This monograph for the most part is quite uncritical and lacks adequate summarizations of what the author considers important in the tremendous mass of material which he has sifted. As a reference work for the investigator or teacher it now enjoys, of course, a monopoly in its field, particularly because there has been no second edition of the less ambitious but more readable volume by Dexter and Weiss (1941). For other purposes it cannot be seriously recommended.

WHEN DOCTORS ARE PATIENTS. Edited by Max Pinner, M.D., and Benjamin F. Miller, M.D. W. W. Norton & Company, Inc., New York, 1952. 364 pages, $3.95.

A doctor is first of all a person, and, it follows, a group of doctors represents a cross section of humanity. The truth of this generality is a by-product of—and perhaps the most interesting thing about—the book, "When Doctors Are Patients."

To illustrate this truth was not the purpose of the book. The senior author presents it in "the hope that the method of inquiry will be useful in defining . . . the subjective experience of disease, and, therewith, a broader field for therapeutic activities." From the scientific viewpoint it asks two main questions: (1) How does an individual's personality modify his disease? and (2) how does the disease modify the individual's personality? The thirty-three autobiographical sketches of disease by physicians who, themselves, have suffered give some provocative data.

To the reviewer, however, the scientific values seem comparatively insignificant compared to the human interest. The art, rather than the science of medicine predominates. Too much variation of topics, individuals, and conditions is involved to make a statistical imprint. The variation itself is impressive: one man writes a straightforward account of his experience with a serious and lethal or disabling disease, commenting on it with amazing objectivity; another writes round and round about his comparatively minor disease, rarely getting to the basic condition but allowing his imagination full sway.

The book, with its wide appeal, may be enjoyed by the layman as well as the doctor. The majority of the stories are well written. All who read it can learn from it: sick doctors—like all sick people—are often remarkably egocentric; and, like other patients, want and appreciate a kindly interest in and something done for their symptoms. The physician may well find here the reflection of his own ailments. The experience of his colleagues seems to say, "There but for the grace of God go I." And in this humility he may benefit.

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THE PREVENTION OF RHEUMATIC FEVER—Lowell A. Rantz, M.D., Associate Professor of Medicine, Stanford University School of Medicine. Charles C. Thomas, publisher, 1952. 66 pages, $2.25.

In this volume of 59 pages Rantz gives definite information as to the etiology, epidemiology and prevention of rheumatic fever as related to the Group A hemolytic streptococci.

Clinical recognition of an invasion by the Group A hemolytic streptococci is made by three signs: (1) exudative tonsillitis, (2) marked redness and edema of the pharyngeal soft tissues, particularly the soft palate and pillars, and (3) tender anterior cervical adenitis. A direct swab taken from the pharynx by the oral approach and streaked directly on blood agar plates will give laboratory confirmation of the clinical diagnosis.

The goal of the physician is to prevent infection by hemolytic streptococci by isolation from the acutely ill and suspected carriers. If active hemolytic streptococci invasion occurs, then the prevention of rheumatic fever can be accomplished in practically every case by the multiple injection of the procaine salt of penicillin suspended in oil and aluminum monostearate so that an antistreptococcal concentration is maintained for five to seven days. This can be accomplished by 600,000 units given intramuscularly every other day for two or three doses; 200,000 units orally five times daily (1,000,000 units per day) for seven days is effective.

The monograph is clearly written and is filled with practical suggestions for the general practitioner to whom falls the duty of the prevention of rheumatic fever.

MEDICAL BIOGRAPHIES—The Ailments of Thirty-three Famous Persons. Philip Marshall Dale, M.D., University of Oklahoma Press, Norman, Okla., 1952. 259 pages, $4.00.

In this volume Dr. Dale reveals a talent for the art of the short story which offers a real challenge to the most seasoned professional writer. Fascinatingly told are the vital and final episodes in the lives of 33 famous persons, many of whom were responsible for and some of whom altered the course of history and civilization. Many are included whose accomplishments in politics, literature, poetry, philosophy, military tactics, art and science were outstanding. Here is recorded and retold in pertinent clinical histories the last hours and fate of those finite lives which were entrusted with the destiny of man. Inadvertently, these histories reveal the arduous path through which the principles of clinical medicine and differential diagnosis were developed. A review of these anecdotes indicates the marvelous advances which have been made and the legacy of modern medicine. What science and research have made available to the modern physician is magnified by the appreciation of those infirmities of the great of the past who groped hopelessly and often aimlessly before the simplicity of nature's pattern in the absence of definitive diagnostic method. A fascinating book, which is highly recommended to the apprentice, the journeyman and past master, for information, inspiration, and sheer delight.

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REACTION TO INJURY—Pathology for Students of Disease—Volume II—The Reactions of Submission and Adaptation and the Disease Entities Arising Out of Their Elaboration—Wiley D. Forbus, M.D., Professor of Pathology, Duke University. The Williams and Wilkins Company, Baltimore, 1952. 1110 pages, 836 illustrations, 54 in color, $20.00.

This book represents a new and interesting approach to pathology and its clinical applications. Rather than being a rigid and formal presentation of gross and microscopic pathology, with emphasis on cellular details, it is a dynamic approach to the use of pathology in correlating function with organ alterations in disease. Disease is interpreted from the initial viewpoint of relevant facts in biochemistry, anatomy, and physiology, etiological factors are discussed, and the consequences in terms of function and altered tissue structure are elaborated. It is, therefore, a type of book which can serve as a text in pathology, fundamental clinical medicine, or pathological physiology.

The material covered in this volume deals with disturbances in metabolism, vitamin deficiencies, blood dyscrasias, endocrine imbalances, congenital dysplasias, and disturbances in growth and development. Functional and structural adaptation to diseases in the circulatory system, lungs, and viscera are discussed. The central nervous system is very briefly covered.

The book is bulky and expensive, but considering its value both as a pathology text, an interpretive correlation of clinical medicine and pathological physiology, and its delightfully stimulating approach to disease it is fully worth the cost.

Medicine is constantly changing. The student will find this volume an excellent place to embark upon the study of disease; the practicing physician will find many delightful hours in reliving much of his former medical experience in the light of changing concepts of disease causation by the study of this volume, and his practice and approach to clinical problems will thereby be enriched. The reviewer recommends the book, is happy to keep it on his shelf for reference work, and enjoys browsing through it when leisure time invites creative reflections about pathology and medicine.

A TEXTBOOK OF PATHOLOGY—7th Edition. E. T. Bell, M.D., Emeritus Professor of Pathology, University of Minnesota. Lea and Febiger, Philadelphia, 1952. 1008 pages, 529 illustrations, 5 color plates, $12.00.

This is one of the standard American textbooks of pathology which is basically unchanged in the new edition. Twenty-seven of its thirty chapters are again written by Bell, the rest by his colleagues Clawson and McCartney. Downey is accredited with revision of the chapter on *Blood.* It presents a reasonably full account of elementary facts of human pathology. The text has been expanded by about 100 pages. The illustrations continue to be numerous and admirably reproduced. References to the literature are conveniently located after many of the subdivisions of chapters and classical writings are listed frequently if not regularly. The organization of the text is conventional, approximately half the material being presented according to organ systems. There is a well-advised section on the *Value of the Biopsy and How It Should Be Performed* but this is appended to the end of the chapter on *Tumors* and the broader aspects of the value and use of the biopsy in diagnosis are neglected. The structure and content of the book make it a useful handbook to the beginning student. As an introduction to the study of disease on a scholarly plane, it has certain shortcomings. There is a conspicuous lack of anything to orient and shape the attitudes of students entering upon a new and unfamiliar field. The reader is thrust immediately into definitions of special terms in the all-too-brief introduction without benefit of any reflections on the nature and significance of disease. This is exemplary of the categorical character of the text as a whole. The disposition of the subject matter appears ill-chosen in some instances. For example, the discussion of Hemorrhagic Diseases is a subdivision of the chapter on *Circulatory Disturbances.* Disturbances in the metabolism of electrolytes and the pneumoconioses are discussed in a chapter entitled *Retrogressive Tissue Changes,* which are by and large those structural changes in the cell that are the hallmark of injury from a wide variety of causes. *Diseases Due to Deficiency of Vitamins* are described but no other forms of nutritional deficiency in any one section. Hypersensitivity is relegated to a brief paragraph in a section of *Immunology* without being given due consideration as a mechanism of disease. About twenty pages are given to descriptions of some of the viral and rickettsial infections in the chapter on *Bacterial Diseases* but only one page is devoted to a discussion of the broad aspects of the problem of viruses. General remarks on tumors are more adequately presented, comprising about eighteen of the 150 pages on *Tumors.* There is nothing in the style to make this book appreciated as medical literature.

* * *

FORENSIC MEDICINE—2nd Edition—Keith Simpson, M.D. (Lond.), Reader in Forensic Medicine to the University of London. Edward Arnold & Co., London (Williams and Wilkins, Baltimore), 1952. 344 pages, $4.50.

This second edition of an excellent textbook provides a brief and essentially practical guide to current teaching in forensic medicine.

While the legal premises are fundamentally those of England and Scotland, the work should serve as a reliable guide to the physician in his contacts with the law arising out of his practice.

Several sections, notably those dealing with death under anesthesia, asphyxia, and industrial injuries, have been rewritten and statistics have been brought up to date. Discussion of laboratory procedure (which in practice properly belongs to the specialist) has been kept to a minimum.

The subject matter is presented in a vivid and interesting manner.

* * *

SHOCK TREATMENTS, PSYCHOSURGERY AND OTHER SOMATIC TREATMENTS IN PSYCHIATRY—2nd Revised and Enlarged Edition—Lothar B. Kalinowsky, M.D., Research Associate in Psychiatry, Colllege of Physicians and Surgeons, Columbia University, and New York State Psychiatric Institute and Hospital; and Paul H. Hock, M.D., Principal Research Scientist (Psychiatry), New York State Psychiatric Institute and Hospital; Assistant Professor, College of Physicians and Surgeons, Columbia University. Grune & Stratton, New York, 1952. 396 pages, $8.75.

The second edition of this volume has been revised and enlarged, particularly in the description of psychosurgery. There is no doubt that this is the most thorough and comprehensive book available on the general theme of physiological treatment in psychiatry. Beginning with an account of the historical development of these therapies, the authors proceed to outline in detail the literature on the subject of insulin and convulsive therapies, indicating the various techniques and modifications, complications, therapeutic results, psychological, neurological and laboratory observations, and add their own opinions of and critical comments on these procedures. The chapter on psychosurgery is admirably written, and techniques such as a standard procedure, partial lobotomy, leukotomy, gyrectomy, topectomy, cortical undercutting, thalamotomy, and transorbital lobotomy; complications, physical, neurological and psychological changes resulting, and therapeutic results in schizophrenia, affective disorders and psychoneuroses, are all presented.

Somatic methods of treatment in psychiatry are not new, but the present-day application of the so-called "drastic therapies" is about sixteen years old. There are other somatic therapies other than the shock therapies, and psychosurgery and the use of narcotherapy, drugs like benzedrine, acetylcholine, histamine, myanesin and glutamic acid, besides such treatment as nitrogen inhalation therapy, carbon dioxide and ether are outlined. The "Antabuse" therapy of alcoholism developed in recent years is also given. The many theories offered to explain the modus operandi of these treatments are discussed, and the authors conclude by stating "at present we can say only that we are treating empirically disorders whose etiology is unknown, with methods such as shock treatments whose action is also shrouded in mystery." The bibliography is detailed and excellently chosen. This volume remains the most comprehensive and authoritative in the field.

* * *

TEXTBOOK OF MEDICINE—10th Edition—Edited by Sir John Conybeare, K.B.E., M.C., D.M.(Oxon.), F.R.C.P., Physician to Guy's Hospital, London; and W. N. Mann, M.D.(Lond.), F.R.C.P., Assistant Physician to Guy's Hospital. The Williams and Wilkins Company, Baltimore, 1952. 912 pages, $8.00.

The tenth edition of this textbook of medicine appears three years after the publication of the ninth edition. There is, for the first time, a coeditor in Dr. W. N. Mann, a colleague at Guy's Hospital.

The new edition embodies revision and some rewriting in many sections. It is interesting to find that many of the items singled out for criticism in review of the ninth edition in California Medicine (71:317, Oct. 1949) have been corrected: For instance, a new appendix has been added on the sulfonamides and antibiotics (attempting to summarize the position at the date of going to press); there has been improvement of the sketchy section on endocrinology; propylthiouracil is now advocated instead of thiouracil in the therapy of thyrotoxicosis; and croton oil purgation is no longer recommended for cerebral hemorrhage.

As noted in our 1949 review, this book is primarily a text for the British medical student. It will still bear reading by the American physician for comparison and interest.

STEREOENCEPHALOTOMY (Thalamotomy and Related Procedures) Part I—Methods and Stereotaxic Atlas of the Human Brain. E. A. Spiegel, M.D., Professor of Experimental and Applied Neurology, Head of the Department of Experimental Neurology, Temple University School of Medicine and H. T. Wycis, M.D., F.A.C.S., Clinical Professor of Neurosurgery. Grune & Stratton, New York, 1952. 176 pages, $8.00.

This volume summarizes an extensive program of research in a new and rapidly developing field of neurosurgery. The methods and equipment developed serve as the basis for future clinical investigation. There is little doubt concerning the value and great therapeutic possibilities of this method.

The authors have produced a stereotaxic atlas of fundamental importance to those interested in this phase of neurosurgery. This volume is part one of a series. Subsequent parts yet to be published will deal with clinical problems and should prove of greater general interest to the profession.

* * *

DISEASES OF THE NERVOUS SYSTEM — Described for Practitioners and Students—7th Edition. F. M. R. Walshe, M.D., D.Sc., F.R.C.S., Fellow of the Royal College of Physicians of London. The Williams and Wilkins Company, Baltimore, 1952. 365 pages, $5.50.

This work is intended to be "a simple textbook adapted to the needs of the student and practitioner," and in this it meets its purpose. It is not all inclusive but deals with those diseases most commonly met in practice and with the methods of treatment and diagnosis which are most useful in the general practitioner's hands. It is lucidly written, avoids complex terminology, and contains no bibliography. Neurologic disorders are presented as fluid states and not as "anatomical moulds."

Of particular value are those sections which differentiate organic from functional features in the history and examination. The author is to be commended upon the repeated stress placed upon the avoidance of producing psychological invalidism by ominous prognoses and restrictions, and of sparing the patient valueless but "traditional" treatments when his resources could be better utilized in other ways.

There are a few qustionable points such as failure to consider the place of surgery in the treatment of cerebral aneurysm and the inclusion of psychomotor epilepsy under "post-epileptic automatism," but these detract little from the value of the book.

* * *

PROGRESS IN NEUROLOGY AND PSYCHIATRY—An Annual Review—Volume VII—Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine. Grune & Stratton, New York, 1952. 604 pages, $10.00.

The bulk of this volume is a tribute to the amount of work which is being done each year in the field of neurology and psychiatry. As must always be the case, the various chapters reflect the personality and ability of the particular author responsible for their compilation, and thus vary greatly in quality. However, the general level is high, and for this reason the reader who would like an encyclopedic view of the whole field and has the staying power to plow through the volume should gain his objective. However, it will be a rare physician who will possess this stamina, and for this reason it is probable that the book is of more value as a reference work. In this regard, the necessary limitations of space are a handicap, so that it must serve the purpose largely of an annotated bibliography, saving the reader the necessity of perusing the more ponderous indexes. It seems to this reviewer that the endeavor to produce a volume that gives the whole picture in a readable form, yet is detailed enough for the specialist, is doomed from the start. The present work has made a valiant attempt at this hopeless task.

LIVING WITH DIABETES — Edward Tolstoi, M.D., Crown Publishers, Inc., 119 Fourth Ave., New York 16, 1952. 90 pages, $2.00.

In this easily readable short (87 pages) book, Doctor Tolstoi presents his views of diabetic treatment to the lay reader. Actually Doctor Tolstoi probably used more words than were necessary since the entire substance of his book is this—take insulin regularly, eat about what you want, and don't worry about spilling sugar.

Whether Doctor Tolstoi is right or not in his assumption only time will tell. However, it is fair to point out that at present he only claims fifteen years' experience in this type of treatment, certainly too short a time to evaluate the eventual evidence of retinitis, arteriosclerosis, etc. Also, it is very disappointing to this reviewer to see the problem of the obese diabetic disposed of in one sentence.

It is obviously impossible in a review to go into the controversial aspects of diabetic treatment. One wishes however that Doctor Tolstoi would present more definite proof of his views before attempting to persuade the public that present-day methods of treatment are entirely unnecessary.

* * *

INTRODUCTION TO CLINICAL NEUROLOGY — 2nd Edition—Gordon Holmes, M.D., F.R.S. The Williams and Wilkins Company, Baltimore, 1952. 189 pages, $4.00.

It is open to question whether anyone owning a copy of the first edition of this work would profit greatly from purchasing the second, since the changes made have been relatively unimportant. The book is a small one, written in simple language which should be readily understood by the medical student embarking on his study of neurology. Yet it contains the experience of a great master in the field, and can be read with profit by the specialist as well. The objective of the book is to teach the elicitation and interpretation of neurological signs, rather than to describe neurological diseases and their treatment. Thus it in no way presumes to take the place of a neurological text. It is preeminent in its field, and can be highly recommended to the medical student, the practitioner who would like to sharpen up his neurological acumen, and most of all the neurologist who at some time had the privilege of making ward rounds with the author.

* * *

DIAGNOSTIC ELECTROENCEPHALOGRAPHY—Hans Strauss, M.D., Associate in Neurology, Mount Sinai Hospital; Mortimer Ostow, M.D., Med Sc.D., Adjunct in Neurology, Beth Israel Hospital and Mount Sinai Hospital; and Louis Greenstein, M.D., Adjunct in Neurology, Mount Sinai Hospital, New York City. Grune and Stratton, New York, 1952. 282 pages, $7.75.

The field for books dealing with electroencephalography has, in the opinion of this reviewer, been pretty well worked out, and might be allowed to remain fallow for a while. The volume under discussion presents nothing that is not already available in standard works on the subject. Certain of the instructions regarding technic would not be agreed to by many workers of experience in the field, yet are set down in a rather dogmatic fashion. This dogmatism is carried into details with which the authors seem obviously unfamiliar. Thus, in speaking of the use of needle electrodes, which are not favored save in "unconscious or restless patients," they recommend the use of eighteen gauge hypodermic needles. Such large needles, suitable for a transfusion, are obviously not to be used as electrodes, so that one wonders how much experience the authors have actually had with needle electrodes.

In spite of such minor discrepancies, the book is an adequate text in the field, and contains good illustrations and an admirable bibliography.

BIOCHEMISTRY AND HUMAN METABOLISM. Burnham S. Walker, M.D., Ph.D., Professor of Biochemistry; William C. Boyd, Ph.D., Professor of Immunochemistry; Isaac Asimov, Ph.D., Assistant Professor of Biochemistry, all at Boston University School of Medicine. The Williams and Wilkins Company, Baltimore, 1952. 812 pages, $9.00.

The foreword by John T. Edsall expresses well the purpose and spirit of this book. He describes the book as having a freshness and vitality in its outlook and presentation which is distinctive among biochemistry textbooks written for medical students. Professor Edsall further expresses his enthusiasm in that the first chapter is devoted to proteins, the basic material in cell structure and function. The authors do not attempt to precisely define proteins, but describe them as "large molecules, of molecular weight of the order of several thousand to several million, occurring in the tissues of plants and animals and containing carbon, hydrogen, oxygen and nitrogen, and sometimes other elements, and constructed largely from amino acids." This definition differentiates proteins from other compounds of biological interest, although not by any means describing this class of substance, whose members differ so much from each other.

There are three major attributes of biological chemistry discussed: structure, function and pathology. Structure is explained in the four chapters of Part I which describe proteins and amino acids, protein structure, tissue chemistry, and blood and the anemias. The discussion of function requires fourteen chapters, grouped into Part II, Control; Part III, Growth; and Part IV, Metabolism. Two chapters of approximately fifty pages each are devoted respectively to enzymes and to hormones, which control the rate and direction of the chemical reactions occurring in metabolic processes. These two chapters describe the basic chemical processes catalyzed by enzymes and hormones, as well as the structure and nature of the catalysts themselves. It is furthermore made clear that although there is an apparent static structure of the human body, it is in reality "a system in which the various components are in a state of flux and are related to and depend upon one another in complex fashion. Nothing in the body remains static, not even the inorganic constituents of the bones and teeth." The book deals with the body as a "dynamic phenomenon."

Part V, Pathology, contains the excellent Chapter 19 on Vitamins and Vitamin Deficiency Diseases, and Chapter 20, which discusses the physiology and theoretical chemistry of infection in a disappointingly general and sketchy manner.

Part VI is an appendix of four chapters on the physical chemistry of protoplasm. The authors are to be congratulated on their pedagogical insight and courage indicated by their placing this discussion at the end of the book. In so many books and university courses in biochemistry the reader or student is bored and frightened by the complex physical chemistry formulas and equations, so that he thumbs through the rest of the book listlessly or he takes lecture notes in a state of harassment because of his confusion. The authors of "Biochemistry and Human Metabolism" catch and hold the reader's interest because each step in the development of the subject is simple and clear, with few exceptions.

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PHYSICAL MEDICINE IN GENERAL PRACTICE—3rd Edition—Edited by William Bierman, M.D., and Sidney Licht, M.D., Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, 1952. 798 pages, $12.50.

This third edition is an entirely new book both in content and authorship. It has separate chapters by 22 authorities covering almost every aspect of rehabilitation. The book is divided into two sections—"methods" and "clinical applications." Under "methods" the routine aspects of physical therapy are adequately covered such as heat and cold, hydrotherapy, diathermy, ultra-violet radiation, and massage. Moreover, there are excellent chapters on the new and less-known methods such as ultra-sound, manipulation, functional muscle testing, exercise, and medical rehabilitation. The chapter on manipulation is one of the few good expositions of this controversial subject and should be read and studied by every physician dealing with musculo-skeletal disorders.

The wide spectrum of conditions covered under "clinical applications" ranging from eye to genito-urinary diseases gives proof to the statement that physical medicine has outgrown the concept of adjunctive therapy in orthopedics to become the broadest of the clinical specialties. Also physical medicine should and does consist of more than heat and massage and thus requires medical planning and supervision.

All in all, this book is one of the best now available in its field and is to be highly recommended to general practitioners and also specialists in neuromuscular and musculoskeletal conditions.

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VASCULAR DISEASES IN CLINICAL PRACTICE—2nd Edition—Irving Sherwood Wright, M.D., Associate Professor of Clinical Medicine, Cornell University Medical College. The Year Book Publishers, Inc., 1952. 552 pages, $8.50.

The second edition of this fine book has lost none of the compactness which characterized the first edition and which made it a concise source of information for those involved in the practice of clinical medicine. Chapter II embracing the history and physical examination as well as special study of the patient with vascular disease is eminently worthwhile reading for any physician in clinical practice regardless of specialty. The chapters allocated to arteriosclerosis and thromboangiitis obliterans are excellent and the selections on safeguards and therapy are extremely wise especially in regard to the use of vasodilators and sympatholytic drugs. Material has been added describing the more recent developments in the field of lipid metabolism in relation to arteriosclerosis. Other new material concerns the relation of ACTH and cortisone to the therapy of thromboangiitis obliterans, scleroderma, essential polyangiitis, and disseminated lupus. The anticoagulants Tromexin, Paritol, Hydroxycoumarin are also discussed at some length. Sections on amputation and cryoglobulinemia are also new to this edition. In general it can be said that Dr. Wright has made a successful effort to cull the most important and the most essential material available to provide a text of unusual aid for the practitioner of medicine.

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THE PATHOLOGY OF DIABETES MELLITUS — 3rd Edition — Shields Warren, M.D., Sc.D., Departments of Pathology of the New England Deaconess Hospital and the Harvard Medical School; Director of the Division of Biology and Medicine, U.S. Atomic Energy Commission; and Philip M. LeCompte, M.D., Departments of Pathology, Falkner Hospital and Harvard Medical School, Boston. 112 illustrations and 3 colored plates. Lea & Febiger, Philadelphia, 1952. 336 pages, $7.50.

Doctor Warren and Doctor LeCompte have done a beautiful job of describing the various pathological changes found in diabetes mellitus. The subject is covered thoroughly including a description of the changes found in each organ of the body.

The only drawback of the book is that the known pathology of diabetes isn't too interesting in itself. After reading 315 pages of fairly drab pathology the only really exciting portion of the book is the three-page section on "A Unifying Concept of the Pathology of Diabetes Mellitus" (Chapter 28).

In summary then, this is a fine reference book but it is not recommended for entertaining reading.

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Changing Concepts in Medical Treatment

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- *In a community—even a small one—where physicians established in practice have intensity of purpose, continuing curiosity, healthy skepticism and the spirit of research, the medical atmosphere is one to attract and welcome young physicians who are recently graduated and eager to apply the knowledge gained from the specialists who taught them in medical schools.*

As the modern laboratory and other facilities and equipment now in use in teaching institutions become available in more and more small communities, general practice remote from the medical centers probably will have increasing allure for neophyte physicians upon whom great influence is being brought to bear to induce them to practice medicine where the need is greatest.

Knowledge of the changes in concepts of medical treatment that have taken place in the life-span of the physicians already established in a community will help the young physician fit himself congenially and effectively into the methods of practice of his elder colleagues, with mutual benefit.

A PHYSICIAN graduating from medical school today will take one or two years of internship and be ready to practice medicine when he is about 26 to 30 years old. The expected span of professional life of the physician is 30 to 40 years, although it is not unusual for a physician to have 50 or more years in practice.

Specialism, requiring longer training, has tended in recent years to extend from medical centers and larger cities into smaller cities. Now almost any city of 25,000 or more population has well trained physicians representing most of the established specialties in medicine and surgery. Today in the suburban areas of the larger cities, hospitals and clinics are being established for the greater convenience of patients and their families. These developments are providing the general practitioner with more available consultation service and better facilities to carry on practice. This trend has encouraged young practitioners to prepare themselves better in postgraduate study, and eventually some of them may go over into some degree of specialty practice. In spite of this trend there are many influences being brought to bear, both in medical schools and in medical societies, upon young physicians to go into general practice.

In the beginning of their training most medical students look forward to general practice. Undergraduate medical education necessarily is segmented into courses, which are designed primarily within the departments of medicine and surgery and their subspecialties. These subjects should be taught from the viewpoint of making a good general physician and not a specialist. Specialty training belongs to

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the postgraduate phase of medical education, but in the plan of clinical instruction in medical schools the teaching is done almost always by a specialist. The influence of a forceful teacher in a specialty, and of the apparent advantages of specialty practice in a medical center or large city, will cause some students to draw away from general practice. A recently graduated physician recognizes he has been highly trained in methods which will require greater or different facilities than will be available for general practice in a smaller community. However, several recent developments—the establishment of departments of general practice in hospital staffs, residencies in general practice, and societies devoted to the purposes of general practice—may result in an increase in the number of recent graduates going into general practice.

The availability of modern laboratory and other facilities and equipment in the smaller communities, supplied by hospitals, by group practice, or by clinics, will do a great deal to encourage young physicians to go into general practice, for then they would have the tools and skills with which they had learned to work, and they could maintain stimulating and genuine interest in general practice. Perhaps these advantages alone will have more influence than anything else in getting recent graduates to practice in rural and small communities. It is untenable to think these young physicians are being overtrained in light of present knowledge; a double standard in medical education will not result in putting the better trained physicians in the community where they are needed most.

For the purpose of developing the theme of this discussion, a town has been selected which has a population of about 4,000, including the surrounding rural area. The nearest hospital is about 25 miles away. A physician who was graduated in 1950, after one year of rotating internship, has come there to establish practice. Four other physicians have been there for several years. The eldest, now 50 years in practice, is retiring but expects to remain in the town, and it is with the thought of replacement that this young man has come there. The other three physicians, each from a different medical school, were graduated 26 years, 18 years, and 10 years ago respectively. The journal of the state medical society, the *Journal of the American Medical Association,* and a new medical book occasionally, have been the chief sources of medical literature; and occasional attendance at the annual meeting of the state medical society and irregular attendance at the meetings of the county medical society, 25 miles away, have been (over a number of years) the main contacts for these four physicians with the outside medical profession.

The new young physician has an important, and perhaps difficult, problem in adjusting his viewpoint and training to the methods, customs and materials in prevalent use by his colleagues, and in adjusting his methods of practice to a community that has been long accustomed to the ways of his colleagues. It would be most helpful to him if he could know the changing concepts of medical treatment of the common diseases over the period of the last 25 to 50 years; it would help him to understand the viewpoints of his older colleagues and their advice and guidance in consultations and everyday associations, and thereby avoid unpleasantness, criticisms and anxieties that will be lessened with professional seasoning.

A review of the changes over a period of 25 to 50 years in the concepts in medical treatment of any one of a number of common diseases, such as pneumonia, peptic ulcer or rheumatic valvular heart disease, would serve to illustrate the application of such information. The medical curriculum is so crowded today that there is time only for teaching the current concepts and methods, but a review of the changing concepts would be an effective and realistic way of teaching medical history.

Forty to fifty years ago there were only a few specific remedies for particular diseases. Diagnosis was dependent largely on meticulous characterization of symptoms and physical findings to fit a known disease or syndrome, and treatment consisted of applying the most effective remedy known, which might be purely empirical. So-called symptomatic treatment was at its height. Even though the physician could not cure the disease he was expected to treat the patient and ameliorate the disease, or in some way make him more comfortable and willing to live with the disease. Drugs known as alteratives were a part of the therapeutic armamentarium—drugs which seemed to help in some effective way, although their action and method of action remained a mystery. As it was realized that large doses of potent remedies could have deleterious effects, there was a tendency to revert to small doses, which might be ineffective in producing the desired relief of symptoms; for instance, the small tonic doses of digitalis, arsenic and other drugs. Since the metabolism of iron in the body demanded only a minute daily requirement, there was no object, it was felt, in using massive doses of iron to treat anemia. Polypharmacy had its day. Bitter professional battles were fought over the choice of drugs, the dosage, and the methods of using them.

Another decade or two later was characterized as a period of therapeutic nihilism. Clinical practice had been influenced greatly by what had been learned, at autopsy, of pathologic changes. Faith in many drugs was lost. Laboratory methods were developed and became more widely applicable in practice. Around 1920 emphasis in teaching and in practice was on diagnosis. Students in many medical schools in those days complained to their teachers about the inadequacy of training in therapy, and often were told that the important function of the medical school was to teach diagnosis, that treatment would be learned during the hospital internship, that once the diagnosis was accomplished, treatment would be standard and reasonably easy.

With this trend, the basic sciences allied to medicine took on an enlarged application to practice. The teaching of the preclinical sciences became more profound, both in hours of instruction and content of curriculum. There were fewer doctors of medicine and more doctors of philosophy teaching these preclinical subjects, and this trend has developed until today most teachers of preclinical subjects in medical schools are not physicians. Research by these scientists has become a large part of the activities and responsibilities of the medical schools, and that research has been done with intent of clinical application, either in the better understanding of disease processes, or in the treatment of disease. Indeed, these researches are largely responsible for the present-day concepts of medical treatment. The anatomist no longer teaches morphology alone, but the relation of structure to function. The physiologist has contributed much to the understanding of symptoms as related to disturbed function of an organ or system. The biochemist has developed methods to study altered metabolism, and has devised or created new compounds to correct metabolic derangements and new substances with which to treat disease in a more specific way. The pharmacologist has restudied old drugs more thoroughly with new methods, has investigated new compounds for their effectiveness against specific disease or against symptoms of physiologic disturbance and altered metabolism associated with the disease. The microbiologist has made discoveries of previously unknown organisms that cause disease and has aided in the selection of effective new agents to combat these infections.

With all of these developments during the past decade or so, we are living medically in a happy and enthusiastic therapeutic age. No longer are the knowledge and responsibility limited to a single effective therapeutic agent against a specific disease. The more or less specific agent may combat the disease effectively, but some symptoms may remain, or occur, which can or should be corrected by other therapeutic agents through their pharmacodynamic effects, or influence, on physiologic disturbance or altered metabolism. Indeed, a previously described disease may no longer be a disease in the strictest sense, but a condition characterized by symptoms associated with a disturbance in physiologic function, which can be corrected by certain therapeutic agents. Some of the previously poorly understood clinical conditions may be removed from the realm of psychoneuroses.

In reality we are in an era when we must be aware of the possibility of overtreatment, which may be almost as undesirable as therapeutic nihilism. The recent graduate, imbued with this viewpoint and enthusiasm, may be tempted to the employment of a therapeutic agent without accurate diagnosis, largely on a therapeutic trial basis, reverting to what in effect is the modern form of so-called symptomatic treatment. Healthy skepticism and scientific honesty will aid in keeping this type of treatment, when justified, above superficiality.

The neurophysiologist has added greatly to the understanding of the symptoms related to the imbalance of the sympathetic and autonomic nervous systems and the influence of an unstable neurovascular mechanism in many clinical syndromes. Psychiatry has enlarged its interests beyond the psychoses and has contributed much to reemphasize the importance of treating not merely a disease but the patient as a whole. Every physician who accomplishes practice in its fullest sense must practice psychiatry to some degree, at least in an informal way. The more formal recognition of this phase of treatment today should not change the general physician in his viewpoint or responsibility; it should make him more consciously aware of the role played by the psyche and increase the utilization of his inherent ability in this field. It is not new knowledge that the emotions and anxiety states are important factors in the cause and treatment of peptic ulcer, hypertension and a variety of other diseases, but the present understanding of coping with these factors adds greatly to the effectiveness of the management and treatment of these diseases. What with the enthusiasm about psychiatry today and the difficulties surrounding the selection of cases for formal psychotherapy, a physician doing general practice needs more than ever to keep his sense of equanimity and avoid the pitfalls of overlooking organic disease. The patient with serious organic disease may have many symptoms related to an anxiety state, which may increase or modify the course of that disease, and he should receive any possible benefit from psychiatric care, informal or otherwise, in addition to indicated treatment of the organic disease. This viewpoint has particular application in the care of the aged.

The development of the specialties and of courses in postgraduate education has put advanced information and knowledge, new instruments and precision equipment, and new skills within the reach of almost all patients except those in the most remote areas. A physician in general practice is in position to be aware of these advantages for his patients. A medical student is taught by a specialist to make examinations in the specialty fields; he learns to do by doing, with less emphasis on the didactic lecture method of teaching. He uses the electrocardiograph, the fluoroscope, the ophthalmoscope, the proctoscope and other specialty diagnostic instruments. This does not make him a cardiologist, radiologist, ophthalmologist or other specialist, but he has a more comprehensive understanding of a patient's condition, and if he remains aware of what is beyond his ability to interpret and treat, he will select the proper consultant for the patient in a more intelligent and less expensive manner.

Preventive treatment is becoming more and more a responsibility of the practicing physician, in light of newer knowledge about many diseases and abnormal states.

Rehabilitation, as a special responsibility, occupies a prominent place in the treatment of many conditions, and newer skills in the field bring this phase of treatment into utilization where it has never been before. Take the field of peripheral vascular diseases for example. Time was when this field seemed to belong to surgeons alone. Then specialists in internal medicine became interested. The broadening interest of the cardiologist contributed much, and in many institutions the department of cardiology enlarged to become a department of cardiovascular diseases. The pharmacologist investigated the effectiveness of certain and many drugs to determine the influence on vascular tone. There was a time when patients with peripheral vascular disease were turned over to the therapist in physical medicine with permission and a plea for him to take over the treatment. All of this changing concept in treatment implies the advisability and necessity of teamwork of several interests and skills in the pattern of modern treatment of many diseases and abnormal conditions.

The single specific drug or remedy for a given disease or abnormal state is continually being sought. That goal has been reached in many instances. Then it becomes the challenge to find a better preparation, or another type of the same preparation for different methods of administration, as the circumstances of the illness and its complications demand. Under effective treatment, complications and the character of the complications may change. Restless research continues to seek more effective drugs and methods for the treatment of the complications.

When a single more or less specific therapeutic measure is not available, the scope of treatment becomes greater. Thorough diagnostic study includes an appraisal of function in relationship to structure, and interpretation of disturbed physiology and altered metabolism in relationship to symptoms. For the treatment of these symptoms, which, indeed, may have a sound scientific basis, a number of potent and effective drugs and chemicals, or other therapeutic agents, are available; the choice of the most suitable drugs or other agents for the individual case and its variations is an expression of skill in the therapeutic phase of the practice of medicine.

With research clarifying the cause and nature of many diseases, preventive measures are a part of medical treatment. Psychiatry, formal or informal, is of increasing importance in the care of the sick. Methods of rehabilitation become a part of treatment, both to help the patient to cope with the mental and emotional strain of disease, and to assist him in his return to a useful, productive and acceptably active life.

Antibiotic agents, newer anesthetics and skills in anesthesia, increasing surgical skill and refined techniques, new instruments of precision, better preoperative preparation and more effective postoperative methods of care, have contributed extensively to the surgical treatment of certain conditions for which, formerly, surgical treatment was impossible. So, in addition to comprehensive and rapid changes in the concepts of medical treatment, the scope, skills and accomplishments of surgical treatment must be coordinated and integrated, today more than ever, in the proper selection of therapeutic measures for the individual patient.

Now, to get back to the young physician who is establishing his practice in the area having about 4,000 population and working with four colleagues who represent a variety of experience and medical educational background, dating back over different segments of a span of professional life. He knows the current views and approach to treatment. Will his medical school and hospital training have acquainted him sufficiently with the changing concepts of treatment over the professional life span of the other four physicians? And will the other four physicians have kept up with medical progress to allow these five physicians to speak the same language in the consultation room, and to meet each other in a cooperative and uncritical manner which the contacts of everyday practice will require? If so, the efforts and methods in medical education, undergraduate, postgraduate and continued self-education will have met the challenge in the changing concepts of medical treatment.

Curiosity, intensity of purpose, healthy skepticism, the spirit of research and desire of contribution to further knowledge, will not allow the concept of treatment to remain static—ever.

235 North Fifteenth Street.

Evaluation of Exposure Treatment of Burns

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• *For purposes of comparison with the occlusive dressing method of treating burns, the exposure method was used in 30 cases—16 of first and second degree and 14 of third degree. Attempt was made to simulate the conditions which might be expected to prevail in mass treatment of burned patients—inadequate personnel and materials. Elaborate measures to immobilize burned areas were not employed.*

Healing of first and second degree burns was natural and the results satisfactory without further treatment. In third degree burns, skin grafting was necessary after the eschar was removed. Cracking of the eschar several days before time to remove it in some cases of third degree burns necessitated use of occlusive dressings in the last few days before skin grafting was done.

The exposure method is considered valuable in circumstances in which saving of time, material and personnel is indicated. Generally it is not suitable for treatment of encircling burns of the trunk or extremities, since maintaining the integrity of the eschar is extremely difficult in such situations.

WALLACE,[5, 8] BLOCKER,[2, 3] AND PULASKI[7] in recent reports on the exposure treatment of burns stressed the saving in personnel, the need for fewer transfusions, decreased infection, comfort and freedom from pain for the patient, the necessity of fewer skin grafts and, for patients with less severe burns, a shorter hospital stay. In order to compare results with those reported, the authors (who had used the closed or occlusive dressing technique since it was introduced by Allen and Koch in 1942) treated thirty consecutive patients by the exposure method.

The exposure treatment of burns is not a new method. It was used to some extent more than fifty years ago. Some three years ago it was revived by Wallace of Edinburgh and since has been used extensively by Blocker and Pulaski in the United States. All of them have been enthusiastic in reports. More recently other investigators, including Evans,[4] have compared the exposure method with the closed occlusive dressing and have been more conservative in their appraisal.

PRINCIPLES OF THE EXPOSURE METHOD

In the exposure method, the burned area is left exposed to the air without the application of any ointment or dressing. The basic principle of this method is the formation over the burned area of an eschar. This occurs within 18 to 36 hours after the burn is exposed to the air. The eschar acts as a natural dressing to protect the injured area while healing occurs in first and second degree burns and acts as a protective covering for full thickness damage. It serves as a temporary substitute for the normal epithelium and protects against invasion by infective organisms. While this dry eschar is present, bacteria fall upon it as they would on normal, intact skin; but because of absence of moisture and warmth the micro-organisms do not grow and multiply. Ideally, once the burn has been covered by the eschar the raw surface is never again exposed to the air until the area has healed or until the eschar is removed and skin grafting is performed. Wallace[5] stressed the necessity of immobilization to avoid cracking or in any way disturbing the continuity of the protective eschar. However, immobilization is difficult and often impossible. By the use of specially constructed beds, plaster splints and suspension with calcaneal pins and fingernail traction, Wallace obtained satisfactory immobilization in certain cases. It is doubtful, however, whether the average physician treating burns would elect these somewhat extreme measures to obtain the necessary immobilization outlined by Wallace. Blocker and Pulaski deviated from the rigid standards of immobilization set up by Wallace and permitted considerable motion and ambulation once the eschars were formed. The amount of motion permitted and the area involved partly determine the time interval before cracks appear in the eschar. Despite these cracks Wallace and Blocker continued the exposure method, without turning to pressure dressings, until healing was complete or skin grafting was carried out.

METHOD AND RESULTS

Treatment of a fresh burn should begin with measures to relieve pain and shock. Morphine should be

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used sparingly; codeine or a barbiturate often will suffice. In children the use of morphine is contraindicated.

For a burn covering more than 20 per cent of the surface of the body, the authors immediately begin infusion of irradiated plasma or normal saline solution pending the cross-matching of blood for transfusion.

The quantities of colloid solution, electrolytes and water necessary to combat shock are estimated from the patient's weight and the per cent of surface area burned, according to the principles of Evans.[4] During the first 24 hours 1 cc. of plasma or blood is administered per kilogram of body weight for each per cent of surface area burn. An equal quantity of electrolytes is given in the form of normal saline solution to correct dehydration owing to the shift of extracellular fluid into the damaged area. During the second 24 hours one-half of the above calculated fluid requirement is given. In addition, 5 per cent dextrose in water is given to provide the normal daily water requirements for urine formation and insensible loss. If vomiting does not occur, the electrolyte and water requirements are best administered orally as a solution of 3 to 4 gm. of sodium chloride and 1.5 to 2 gm. of sodium bicarbonate per quart of water. In adults one of the best criteria of adequate control of shock is an hourly urinary output of 50 cc. The amount can readily be measured by using an indwelling Foley catheter.

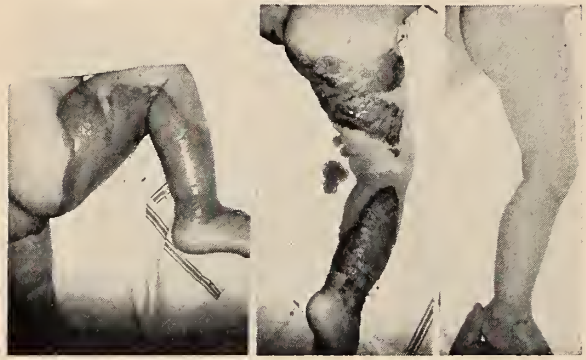
Figure 1.—*Left*, second degree burn with hot water on the day of injury. The patient was 17 months of age. *Center*, well formed eschar three days later. *Right*, complete healing 14 days after injury.

Transfusions of whole blood are of great importance in treatment of severe burns. Extensive third degree burns can cause a reduction of as much as 50 per cent in the volume of circulating erythrocytes.[6] During the first 48 hours one-half of the colloid solution should be in the form of blood. Frequent transfusions should be given thereafter to maintain hemoglobin content above 13 gm. per 100 cc. of blood.

Following is the procedure carried out in treating thirty patients by the exposure method: After adequate anti-shock therapy was initiated, all clothing, gross dirt, and ragged pieces of detached epithelium were removed in the simplest possible manner. Very few of the burns were washed with soap and water, and blisters, unless unusually large, were left intact. The patient was placed in bed on a clean but not necessarily sterile sheet in an open ward where the burns were exposed to the air. A sheet supported by a metal frame was used to protect the burned area while the eschar was forming. Depending somewhat on the temperature and comfort of the patient this was continued as long as necessary. Penicillin was administered parenterally in total daily doses of 300,000 to 600,000 units.

First and second degree burns (16 cases, with area of involvement ranging from 5 per cent to 30 per cent of the body surface) dried and a light brown

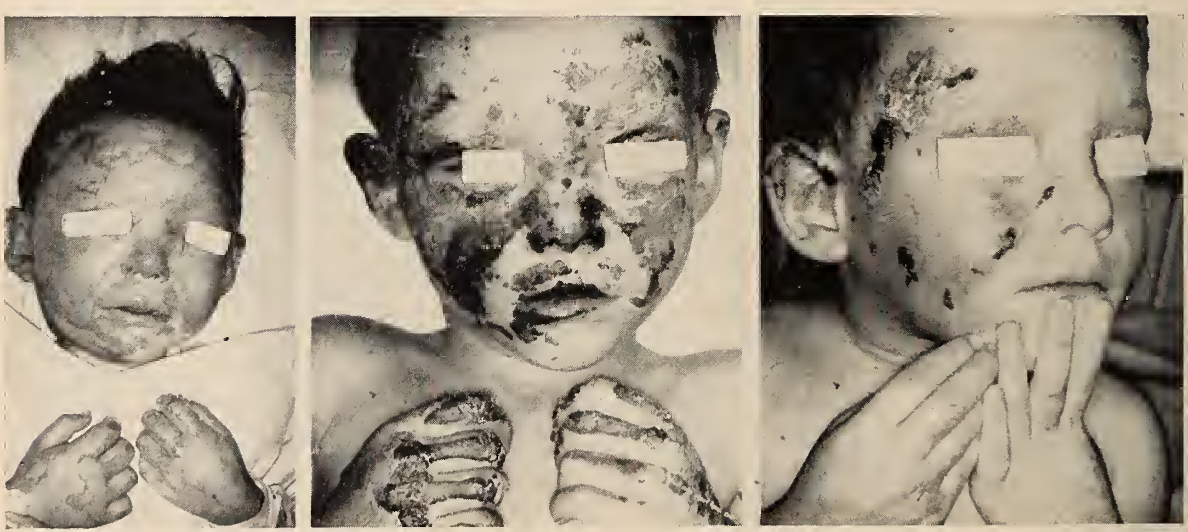
Figure 2.—*Left*, fresh burns of face and hands in explosion of gasoline. *Center*, eschars beginning to separate five days later. *Right*, 23 days after injury, only small areas of third degree burn remain unhealed.

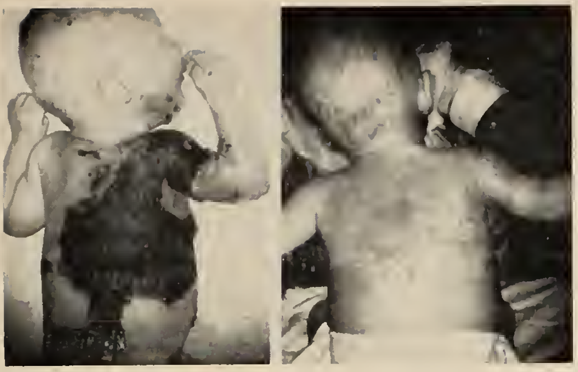

Figure 3.—*Left,* eschar 12 days after second and third degree burn with coffee. *Right,* after covering third degree areas with skin grafts.

eschar formed over the burn in 18 to 36 hours. During the next few days the eschar darkened, and in 7 to 18 days it gradually separated and fell off to reveal complete epithelial regeneration (Figure 1). As attempt was being made to simulate exposure care of the kind it was felt would be applied by the average physician, only simple methods to obtain partial immobilization were employed. For infants and younger children the only immobilizing devices used were arm, leg, and chest restraints to keep the proper area uppermost. Simple plaster splinting was devised for some of the older children; but for the most part they were allowed freedom of the bed. Although breaks and cracks developed in the eschar in a high proportion of cases, complete natural healing occurred in all instances (Figure 2). It was not necessary to abandon the treatment and use dressings in any of these cases. In no case was an area of partial skin destruction converted to full thickness loss due to infection.

Third degree burns. In the exposure treatment of third degree burns the entire eschar should be left intact for about three weeks, then removed and skin grafting performed immediately. In the 14 cases of third degree burns in the present series, the eschar usually cracked by the fourteenth to sixteenth day, and although the low humidity of the atmosphere in Southern California tended to dry the area rather quickly, the continuity of the protective eschar could not be adequately reestablished. This terminated the useful life of the eschar, whereupon wet, occlusive dressings were applied for two to four days, and skin grafting then was carried out (Figure 3). To have continued the exposure method in third degree burns after the appearance of breaks in the eschar would have risked converting a theoretically sterile burn into an infected wound. Signs of infection were absent in the exposure method as long as the eschar remained dry and without cracks. Rarely did the body temperature of a patient rise above 101° F. and usually it was normal. With this method as with the pressure dressing method, close supervision is necessary to prevent neglect.

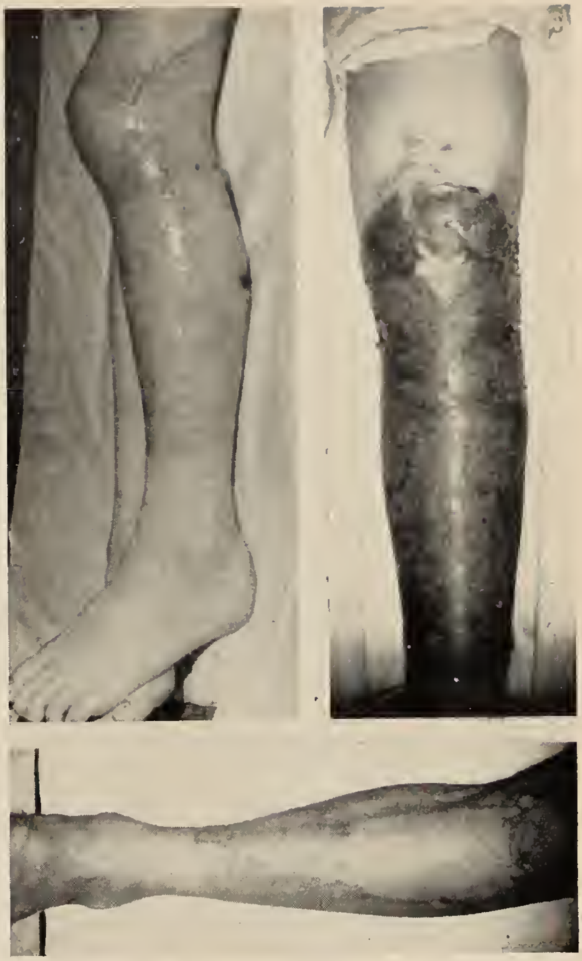

Figure 4.—*Left,* encircling burn of leg on day of injury. *Right,* eschar eleven days later. Simple plaster splint utilized to immobilize knee and to hold leg off bed. *Lower,* after skin grafting.

COMMENT

In children the nutritional state remains more nearly normal with treatment by the exposure method, largely because fear of painful changing of dressings and subsequent unwillingness to eat are eliminated. Better nutrition, the early use of whole blood transfusions to combat shock and the absence of the loss of blood entailed in changes of dressings helped to maintain the content of hemoglobin in the blood. However, frequent examination of the blood is as necessary as when any other form of therapy is used. The amount of skin grafting required is essentially the same as that needed when the pressure dressing method is employed.

Infants and young children should be hospitalized for the exposure method. Cooperative, intelligent older children and adults can have minor burns successfully treated by the exposure method as ambulatory patients outside the hospital. The exposure method is limited by the distribution of the burn, but not by its depth or extent. It was impossible to obtain adequate eschars over circumferential burns of the trunk and quite difficult to obtain them in cases of encircling burns of the extremities (Figure 4). Generally the exposure method should not be used in such cases. The exposure method is readily adaptable to burns limited to one surface of the body. It is particularly useful in treating burns of the face and perineum, as pressure dressings are difficult to apply in those areas and rapidly become soiled.

CONCLUSIONS

In evaluating the exposure method of therapy it is inevitable that comparison be made with results obtained with the occlusive pressure dressing technique. Such comparison must be made on an equitable basis. A *properly applied* occlusive pressure dressing has been proved to be the most satisfactory dressing for burns. However, in the present series attempt was made to simulate the circumstances of the mass care of patients under the stress of abnormal conditions characterized by inadequate personnel and materials. That is the background for the following observations:

1. The exposure method is saving in time, material and personnel.
2. Ideal immobilization of the burned area is often impractical.
3. Satisfactory healing progresses with moderate motion and even ambulation.
4. Before skin grafting over third degree burns, a few days of wet, occlusive dressings may be necessary.
5. Infection was minimal, and there was less pain or discomfort.
6. The amount of skin grafting required was not changed by the exposure treatment.
7. All infants and young children should be hospitalized.
8. Intelligent, cooperative adults and older children with minor burns may be treated without hospitalization.
9. Generally the exposure method should not be used for encircling burns of the trunk or extremities.
10. It is best adapted for burns of one surface of the body, the face and perineum.
11. Vigilance in the care of the patient and the burn is as necessary here as in other forms of treatment.

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The Newer Hematinics, Their Use and Abuse

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• *The newer hematinics are merely refinements of preexisting forms of treatment, but they have aided particularly in a better understanding of the deficiency states. The intrinsic factor of Castle has not been isolated from the gastric juice, and the interrelationships of this substance with the extrinsic factor (vitamin B_{12}) and folic acid have not been defined at this time. Vitamin B_{12} appears to be the active principle of refined liver extract and alone is probably adequate treatment for pernicious anemia. The other varieties of megaloblastic anemia may result from deficiency of vitamin B_{12} or folic acid, although generally treatment with the latter brings about complete and lasting remission.*

The use of multihematinics and multivitamin preparations containing folic acid is to be condemned, particularly because of the possibility of their obscuring anemia and thwarting diagnosis of pernicious anemia until neurologic complications have taken place.

Saccharated oxide of iron is a relatively safe preparation for intravenous administration, but the indications for its use are few. Because the body has no mechanism for iron excretion, only the amount of iron necessary to make up a deficiency should be given, although there is no definite evidence that hemochromatosis results from overdosage.

ALTHOUGH IN THE PAST DECADE folic acid and vitamin B_{12} have been identified and a preparation of iron that is relatively safe for intravenous use has become available, they are but refinements of substances previously used in the treatment of anemia and have added little to the effectiveness of therapy. Folic acid has replaced crude liver extracts and yeast: vitamin B_{12} is replacing refined liver extracts; and conditions in which intravenous use of iron is indicated are almost a rarity. However, these agents have so greatly helped in countless studies of the deficiency states, particularly megaloblastic anemia, that knowledge now seems to have been carried almost to the doorstep of complete understanding of the interrelationships of the hematopoietic factors. There have been several recent excellent clinical and physiological reviews of the subject.[15, 19, 48]

ACTION OF VITAMIN B_{12} AND FOLIC ACID

Castle's hypothesis of an intrinsic and extrinsic factor in hematopoiesis is still valid, but there is considerable confusion as to the role played by folic acid. Little is known about the intrinsic factor,[17] although addisonian pernicious anemia is ascribable to a deficiency of this substance in the gastric juice. Vitamin B_{12} has been identified as the extrinsic factor, but when given by mouth (except in enormous amounts) it has no effect in pernicious anemia unless normal gastric juice or another source of intrinsic factor is given with it. However, when vitamin B_{12} was given to untreated persons with pernicious anemia, the amount excreted in the urine was the same as that excreted by normal persons who received the same amount, regardless of whether the substance was administered by mouth, intravenously, or intramuscularly.[8]

Following exposure to normal gastric juice, vitamin B_{12} becomes unavailable for biologic assay,[43] and it is possible that it combines with intrinsic factor. It is likely that intrinsic factor merely allows vitamin B_{12} to be absorbed from the bowel, but intrinsic and extrinsic factors might combine to form the hematopoietic factor[8] as originally proposed by Castle.

Folic acid (pteroyl glutamic acid), probably through folinic acid (citrovorum factor), is able to cause some response in all cases of megaloblastic arrest.[14] Folic acid is present in the normal diet as polyglutamic acid conjugates together with inhibitors of an enzyme system which breaks down these conjugates. Although normal gastric juice has some anti-inhibitor action,[1] the role of intrinsic factor and vitamin B_{12} in this conjugate system is not known.

When given the naturally occurring heptaglutamates with inhibitors by mouth, patients with untreated pernicious anemia have little hematologic response and excrete less free folic acid in the urine than treated patients or normal persons.[1] Wilkinson and Israels do not believe that "folic acid or its conjugates play any major part in the etiology of the human pernicious anemia syndrome."[49] However, in

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obtaining good responses in the treatment of pernicious anemia they used large amounts of diglutamic and triglutamic acid conjugates by mouth without the naturally occurring inhibitors.

It has been demonstrated that an average of five to ten micrograms of vitamin B_{12} is produced daily by organisms in the lower bowel of patients with pernicious anemia. This material, however, has no effect on the disease process, for it is not absorbed at that level, even in the presence of a source of intrinsic factor.[4, 16] Enough vitamin B_{12} was isolated from the feces of one patient with untreated pernicious anemia to produce a remission when given parenterally to another patient.[4] It is also interesting that antibiotics, particularly aureomycin, taken orally have caused hematologic improvement in pernicious anemia, but the mode of action is not clear.[26]

Given parenterally, vitamin B_{12} is active either as the crystalline material or in extracts of muscle or liver.[13] It is also reported to have matured megaloblastic bone marrow when injected locally into the marrow space.[22]

Callender and Lajtha[5] demonstrated the presence of a folinic acid inhibitor in the blood, and it is a theoretical possibility that vitamin B_{12} neutralizes this inhibitor, permitting maturation of the megaloblast. With tissue culture technique they found that folic acid alone, or vitamin B_{12} with gastric juice or serum will permit maturation of megaloblasts, but vitamin B_{12} alone will not. They believed it possible that an intrinsic factor in the serum activates vitamin B_{12}.[5] It is a little difficult to reconcile this with work demonstrating that vitamin B_{12} will cause local maturation of megaloblasts when introduced directly into the bone marrow cavity when folic acid will not.[22]

Whatever the precise mechanism in vitamin B_{12} and folic acid deficiency, it is probable that they are each active at a different stage of nucleic acid synthesis.[46] Horrigan and co-workers wrote: "It appears likely that folic acid is essential to the formation of various purines and pyrimidines such as thymine from endogenous sources of carbon and amino nitrogen as well as to the interconversion of these substances or of their ribosides. Vitamin B_{12} on the other hand appears to be active in the formation of ribosides such as thymidine from these purines and pyrimidines."[22] A deficiency of either of these substances results in arrest in the maturation of erythroblasts. Administration of large amounts of folic acid forces the reaction to completion on a mass action basis.[46] This depletes the body of vitamin B_{12} and precipitates neurologic relapse, probably an eventual complication of prolonged folic acid therapy in all cases of pernicious anemia. Hematologic relapse also occurs, and subsequent increases in dosage of folic acid do not bring about complete remissions. Failure of vitamin B_{12} therapy to cause prompt remission after folic acid failure suggests depletion of other essential but as yet unidentified hematopoietic factors.[12, 46]

The identity of the Wills' factor which is effective in the treatment of megaloblastic anemia resistant to refined liver therapy has not been clarified, but it is possibly folic acid.[48] The Wills' factor, however, and the principle in proteolyzed liver active in refractory megaloblastic anemia might be still other hematopoietic factors.[46]

The citrovorum factor (folinic acid, leucovorin) is apparently the hematologically active product of folic acid. Clinical experience with this preparation is small but it appears to have erythrocyte-maturing activity similar to that of folic acid.[11, 23] Aminopterin prevents the conversion of folic to folinic acid, and the toxic effects of the former drug are reversed by administration of folinic acid.

TREATMENT OF PERNICIOUS ANEMIA

Vitamin B_{12} is undoubtedly the active principle of liver extract, although there are unconfirmed reports of macrocytosis and persistent decrease in prothrombin concentration after treatment of pernicious anemia with this material.[31] In effectiveness, one microgram of vitamin B_{12} is probably the equivalent of one unit of liver extract,[19] although some authorities recommend using the vitamin in dosage two or three times the amount indicated by that ratio. Larger doses should be employed where there are neurologic complications. Vitamin B_{12} has particular advantage for treatment of the rare patients who have allergic sensitivity to liver extracts. Vitamins B_{12}, B_{12^b}, B_{12^c}, and B_{12^d} differ microbiologically and chromatographically[36] but are all active therapeutically in pernicious anemia.[6, 45]

Spies[39] and others have suggested giving both vitamin B_{12} and folic acid parenterally for pernicious anemia. However, neurologic relapse has not occurred in any patient while adequate liver extract therapy was being administered in the wide experience of several authorities.[20, 40] Liver extract alone has been complete treatment of pernicious anemia for almost 25 years, and there is no good evidence that vitamin B_{12} alone cannot replace it. Meyer[29] has suggested the use of suboptimal amounts of folic acid and vitamin B_{12} by mouth. Despite the reported good results, final appraisal of this form of therapy should await the results of treatment of a large group of patients for from three to five years. There is no good rationale for this combination, and in light of the fact that neurologic complications may occur if therapy is inadequate, any deviation from the accepted treatment is hazardous.[33] When intrinsic factor is identified and made readily available, a combination of it with vitamin B_{12} would be a satisfactory form of oral therapy. If vitamin B_{12} becomes available in large amounts, daily doses of one milligram or more by mouth might be adequate for maintenance in pernicious anemia.[30]

The importance of accurate differentiation of one kind of anemia from another must be emphasized. Pernicious anemia particularly must be identified, for if specific therapy is delayed or permitted to lapse, irreversible neurological complications may occur. Therapy must be definitive, uninterrupted and lifelong.

The inclusion of folic acid in polyvitamin preparations and the use of multihematinics is to be condemned. On the market as of January 1951 were some eighty preparations which, if taken according to directions, would supply from 0.1 to 48 mg. of folic acid daily—frequently enough to obscure the changes in the blood that would lead to the diagnosis of pernicious anemia. Conley[79] pointed out that recently there has been increased incidence of cases in which, although there is no anemia, neurologic complications are already present at the time the diagnosis of pernicious anemia is first established. In many of such cases, the patients had been using vitamin preparations containing folic acid, which by preventing the development of anemia, delayed diagnosis long enough to permit neurologic disease to develop. Because deficiency of more than one hematopoietic agent is rare in California, there is no need here for "shotgun" multihematinics. Specific deficiencies should be diagnosed and treated as such. Only in extraordinary circumstances is more than one agent necessary. No anemic patient should receive therapeutic doses of folic acid alone until after it is ascertained he does not have pernicious anemia.

OTHER MEGALOBLASTIC ANEMIA

There is no specific treatment for the various kinds of megaloblastic anemia other than pernicious anemia. Folic acid therapy usually brings about complete remission in all these disorders. Remission once obtained is frequently permanent despite cessation of therapy. The megaloblastic anemias of pregnancy and infancy[51] generally respond only to folic acid,[28, 44] but sometimes to vitamin B_{12}.[32, 42] Spies, in reports on wide experience with nutritional macrocytic anemia, tropical and non-tropical sprue, noted that patients responded to both folic acid[37] and vitamin B_{12}.[38] The megaloblastic anemia of intestinal disease (anastomosis, stricture, blind loop, etc.) and postgastrectomy respond to folic acid, but because of the theoretical similarity of the latter to pernicious anemia, vitamin B_{12} should be given a trial.[10] It appears that there may be a deficiency of one or the other or of both of these substances, and possibly of other as yet unidentified hematopoietic agents, in these uncommon disorders.[2]

The importance of ascorbic acid in folic acid metabolism has been emphasized by the work of May[28] on the megaloblastic anemia of infants and monkeys deficient in vitamin C. Welch demonstrated that vitamin C augments the production of folinic acid from folic acid both in man and *in vitro* with liver slices.[47] There is probably no defect, however, in the production of folinic acid from folic acid in pernicious anemia.[50]

IRON FOR INTRAVENOUS ADMINISTRATION

Saccharated oxide of iron has filled the need for an iron preparation that can be administered intravenously. As with iron given by mouth, it is of value only in iron-deficiency hypochromic anemia and has no effect on the hypochromic anemia of thalassemia. The few indications for this material are: (1) For treatment of patients who are intolerant of iron by mouth, especially in cases of ulcerative colitis. (2) For cases in which it is necessary to overcome anemia rapidly, particularly in the treatment of the hypochromic anemia of pregnancy shortly before delivery.[24, 34] (3) For the extraordinarily rare patient who has allergic reaction to iron by mouth.[3] (4) For use in hypochromic anemia where iron by mouth has been ineffective, an unusual condition,[27] and for refractory hypochromic anemia in steatorrhea[18] and rheumatoid arthritis.[35] It is of no value in the normochromic anemia of infection,[25] malignant disease without bleeding, uremia, etc.

The slow intravenous injection of this material in amounts varying from 40 to 200 mg. is attended occasionally by venous spasm, nausea and chills, with pain and local phlebitis following extravasation. Reactions are seldom severe enough to necessitate discontinuing therapy. Reticulocyte responses averaging 8.5 per cent[21] occur in from five to thirteen days. There is no correlation between this initial hemoglobin value and the reticulocyte peak. Intravenously administered iron is converted almost quantitatively to hemoglobin. In hypochromic anemia the cause must be carefully searched for, particularly in the male, for there is no mechanism for iron loss of more than about one milligram per day other than bleeding. Treatment of hypochromic anemia is consequently only treatment of a symptom.

Because the body cannot excrete it, iron should be given intravenously in quantities only sufficient to make up for a deficiency. The amount of iron necessary for this can be easily estimated from the formula of Brown.[3] It is necessary to determine in advance whether the anemia is owing to iron deficiency. This can be done simply by looking for hypochromasia of the erythrocytes on the blood smear and determining the mean corpuscular hemoglobin concentration. Computing iron need on the basis of a low hemoglobin content in normochromic anemia would only deposit unneeded iron throughout the body. Difficulty arises particularly with regard to the physiological anemia of pregnancy where the erythrocyte volume is normal and the plasma volume is much increased. Signs of deficiency should be recognized, for otherwise the spontaneous improvement of the physiological anemia occurring later in pregnancy might be attributed to the unneeded therapy. This holds true for vitamin B_{12} and folic acid therapy as well. While there is no definite evidence that iron deposits following transfusion and parenteral iron therapy result in functional impairment of the organ involved,[3] any unplanned, prolonged course of iron injections might prove harmful after a period of time. There is no convincing evidence that copper, manganese or molybdenum speeds up regeneration of blood in patients with iron deficiency anemia.[41]

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Grants to Medical Schools

The National Fund for Medical Education recently made a Class "A" grant to each of the 79 medical schools in the United States. A Class "A" grant amounts to $15,000 for each four-year school and $7,500 for each two-year school. The total amount distributed was $1,132,500.

—*A.M.A. Secretary's Letter*

Causalgia—Pathogenesis and Treatment

VICTOR H. KUENKEL, M.D., *Los Angeles*

• *Gross and microscopic anatomical evidence indicates that pain fibers involved in causalgia are those distributed to blood vessels—possibly to the arterioles—and that, for the greater part, these fibers constitute part of the general visceral afferent system.*

Several investigators have reported evidence that injury to a peripheral nerve of such a type as to cause damage to the vasomotor control of any area produces the initial pain in an extremity, and it is predicated that the arteriolar constriction causing the pain is then prolonged by the sensitization of arteriolar smooth muscle to the amount of epinephrine normally in the blood. If the condition is not treated, tissue anoxia occurs to such an extent that irreversible changes take place in the affected area.

Treatment of causalgia in the lower extremities is directed toward interruption of either the vasomotor or afferent supply of blood vessels by blocking or excision of the second to fourth lumbar ganglia inclusive with the intervening chains. For the upper extremities, the blocking or disconnection of the second and third thoracic ganglia with interruption of the sympathetic chain between the third and fourth ganglia is considered a feasible method of treatment which does not produce the concomitant disability of Horner's syndrome.

Weir Mitchell's description in 1864 of a vasospastic syndrome, now called causalgia, has become a classic. Since that time various reclassifications have been attempted, listing other entities under this heading and describing gradations of severity of pain occurring in the syndrome. Bunnell[2] stated that osteoporosis, Raynaud's disease and phantom limb should be included under the heading "causalgia," and further, that there are gradients of severity in the syndrome varying from the severe pain causing disintegration of the personality to the pain induced by a pinprick of the finger. Davis[5, 6, 7] on the other hand states unequivocally that the so-called "minor causalgias" should not be included.

The term "causalgia" is here used to designate a syndrome characterized by pain in either the upper or lower extremity, preceded by some sort of injury to a peripheral nerve and manifested by tissue changes in the affected part—changes which are characteristic sequelae of inadequate circulation.

The pathogenesis of this condition is the chief concern of this presentation. The evidence for the hypothesis here presented is from various sources. These include anatomical,[4, 9, 10, 11] physiological[1, 3, 6, 7, 12] and pharmacologic[3, 7, 12] sources found in standard literature, and clinical evidence from the author's experience at Bushnell General Hospital in the Second World War.

An anesthesiologist is usually called upon to perform the sympathetic nerve blocks required to substantiate the diagnosis of causalgia and to use alcohol blocks in effecting a cure where surgical operation is inadvisable because of some local condition. Thorough understanding of anatomical and physiological principles involved in the etiology of causalgia is essential to rational therapy.

PHYSIOLOGIC BASIS

Gross dissection of the nerve supply to blood vessels was done in the early 1920's by Hirsch. He found that in the upper extremity the subclavian, axillary and upper portions of the brachial arteries receive their innervation directly from the upper thoracic ganglia and the ansa subclavia. The remainder of the brachial artery is supplied mainly by the radial nerve. The main arteries of the forearm and hand receive the greatest part of their innervation from the median nerve; rarely, a few fibers may be supplied by the ulnar nerve.

It was noted by Kirgis and Kuntz[9, 10] that the inferior cervical and first thoracic ganglia do not carry the entire vasomotor supply to the upper extremity as was formerly thought. They found that there is a regular supply entering the lower nerves of the brachial plexus from the fifth to the second thoracic ganglia via a small gray ramus which is rather constant in occurrence and position. For this reason a so-called "stellate ganglion block" will not interrupt the entire vasomotor supply to the hand. The block must be completed by additional procedure blocking the second and third thoracic ganglia. In addition the author has observed that when alcohol is used to produce a semi-permanent block it is preferable to

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confine the procedure to a block of the second and third thoracic ganglia in order to prevent the occurrence of Horner's syndrome.

In the lower extremity the common and external iliac arteries, approximately as far as the inguinal ligament, are supplied directly from the sympathetic chains and the prevertebral plexuses. The femoral artery is innervated chiefly by the femoral nerve and partly by the obturator nerve in its lower portion. The leg and foot are supplied by fibers running from the sciatic nerve and distributed by the medial and lateral popliteal branches of this nerve. Hirsch noted that nerves supplying blood vessels run an extremely short course, are given off at regular intervals and almost immediately penetrate into the adventitia and media of the vessel walls.

Kerper[7, 10] found in 1925, in histological studies using silver impregnated preparations, that there are three plexuses of nerves within the walls of blood vessels: the adventitial plexus lying in the outer coat of the vessel, the "border" plexus lying between adventitia and media, and the medial plexus lying in the media. No one has been able to confirm the results of one investigator who stated that he had found nerve fibers in the intimal layer of blood vessels.

Nerve degeneration experiments in dogs performed by Kerper indicated that the nerves supplying blood vessels consist of efferent or sympathetic components and cerebrospinal or afferent components. The latter, which have their nuclei in the posterior root ganglia, are considered as being part of the general visceral afferent system. All thoracic and abdominal visceral afferent fibers are carried in the white rami, and their greatest concentrations are found on the splanchnic, cardiac and prevertebral nerves and plexuses. In the extremities, however, a great number of general visceral afferent fibers are carried directly to the posterior root ganglia by the peripheral nerves, only a portion of them being carried through the sympathetic trunks.

It is common knowledge that the regular, rhythmic contractions of the circular and longitudinal muscle coats of blood vessels are entirely painless and that the injection of irritating solutions is painless if only the intima remains in contact with the solution. Pain is produced, however, upon spasmodic contraction of smooth muscle or when the muscle fibers are rendered anoxic. Stimulation of postganglionic vasoconstrictor fibers produces vasospasm, which is followed immediately by pain in the area supplied by the blood vessel.[5, 7] As early as 1879 Francois-Franck[8] noted that stimulation of a stellate ganglion produced vasoconstriction of the ear, the submandibular gland, the nasal mucosa and coronary vessels and that this reaction could be abolished by cocainization of the ganglion.

The last bit of experimental work applicable to this problem is that first undertaken by Cannon in 1933[3, 12] who pointed out that after postganglionic sympathectomy the neuroeffector mechanism found at the junction of the efferent nerve and the smooth muscle fiber becomes highly sensitized to epinephrine (Sympathin E. or Noradrenalin®) to such a degree that normal physiological concentrations of these substances cause pronounced vasoconstriction.

CLINICAL FEATURES

As to clinical features, the following statements are applicable to all cases of causalgia: (1) Causalgia is never associated with the complete interruption of a peripheral nerve. (2) Complete section of the nerve at or above the site of injury will relieve the pain. (3) There is always a history of pain occurring either immediately after injury or within the next 48 hours and continuing until sympathetic block, nerve section or sympathectomy has been performed.

Phantom limb bears little or no relation to causalgia. The reason for lack of success in alleviating pain in amputation stumps by sympathetic nerve blocks is that there is a fundamental difference in the production of pain in the two conditions. Phantom limb differs from causalgia in that the pain is produced by neuroma formation with the constant stimulation of somatic afferent fibers in the nerve in addition to the general visceral afferent fibers which are involved in producing the pain of causalgia. Therapy aimed at eliminating the neuroma is the procedure of choice.

PATHOGENESIS

From the foregoing experimental and clinical evidence it seems that the following conclusions with reference to the pathogenesis of causalgia may be drawn:

Causalgia has two components:

1. *Initial pain* caused by postganglionic section in the peripheral nerve, the injury causing an initial stimulus to the peripheral end of the postganglionic effector mechanism, resulting in arteriolar spasm. The spasm remains because the neuroeffector mechanism is sensitive to epinephrine. (The fact that the pain can be stopped by section of the peripheral nerves is conclusive evidence that the afferent fibers remain undamaged, whereas the postganglionic fibers have been cut by the injury.)

2. *Tissue anoxia* manifesting itself by a series of signs typical of this condition: either dry, scaly skin or extremely wet, cold and clammy skin with brawny induration of the underlying tissue in the distribution of the injured nerve.

TREATMENT

In the author's experience, blocking of the lumbar sympathetic chain at L2, L3 and L4 with either procaine or intracaine has produced excellent results in the treatment of causalgia of the lower extremity. For permanent or semipermanent blocking of these fibers alcohol in concentrations of 60 to 90 per cent may be used. The results are more dependent upon accurate blocking than upon specific concentrations of the drug.

Regarding causalgias of the upper extremity the author differs with the commonly accepted teaching that a stellate block or ganglionectomy is necessary to effect a cure, for it has been noticed that alcohol nerve block or extirpation of the lower cervical ganglia may result in Horner's syndrome of permanent or semipermanent duration, a condition almost as disabling as the original causalgia. In a series of such operations, therefore, all nerve blocks with local anesthetic agents or with alcohol and all sympathectomies for causalgia of the upper extremity were confined to T2 and T3. In all cases the block and the surgical procedure produced complete cessation of pain and in no case did Horner's syndrome develop.

(Since the time when the foregoing work was done the author has followed the procedure of blocking T2 and T3 for vascular disturbances of the upper extremity, with uniformly good results.)

305 South Westlake.

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National Science Foundation Offers Graduate Fellowships

Applications are now available for the 500 graduate fellowships offered by National Science Foundation for 1953-54. Awards are available in mathematical, physical, medical, biological and engineering sciences. Although no awards will be made to students studying for M.D. degrees, those interested in medical research careers will be considered.

The majority of the fellowships will go to graduate students seeking master's or doctor's degrees in science, although a limited number of awards will be made to postdoctoral applicants. Fellows receive stipends ranging from $1,400 to $3.400 plus certain dependent allowances. Appplication may be obtained from the Fellowship Office, National Research Council, Washington 25, D. C.

—*Capitol Clinic*

Postural Vertigo and Positional Nystagmus

RUSSELL FLETCHER, M.D., *San Rafael*

• Oscillation of the eyes of a patient when the head is placed in a certain position is objective evidence to support a complaint of postural vertigo—dizziness when the head is tilted forward or upward or turned to one side or the other. Since positional nystagmus may be difficult to evoke and may be elicited at one time and not at another, it is important to make repeated tests, lest a causative lesion be overlooked.

Vertigo in such cases may be caused by pathologic change in the eighth peripheral nerve or in the central vestibular pathways. Sometimes no organic disease is observable even though positional nystagmus validates a complaint of vertigo. In such instances the patient should be assured that he does not have a progressive disease and be advised against activity in which dizziness would be hazardous.

Many patients complain of dizziness when they change position, as in turning over in bed, stooping, looking overhead, or looking beneath a table. Usually the dizziness, called *postural vertigo,* is a momentary sensation. However, it may be pronounced and extremely disturbing and frightening. The attacks may last several seconds or minutes. Pronounced movement of the eyes, *positional nystagmus,* may be noted in many cases when the patient is examined during an episode of dizziness. Positional nystagmus may result from disease of the central vestibular tracts of the central nervous system, as well as from disease involving the peripheral or auditory mechanism.

Slight transitory attacks of postural vertigo are of no clinical significance, but thorough investigation is indicated if a patient complains of pronounced dizziness. In many cases if no pathologic change is noted in routine examination, the patient is told that there is nothing wrong with him. However, with careful *repeated* examination, positional nystagmus may be observed in a surprising number of such patients. And it is important to examine the patient carefully for the condition, for it is objective evidence of pronounced dizziness owing to disturbance of the vestibular mechanism by organic disease.

In positional nystagmus the movement of the eyes is so great that it can be seen at a distance of several feet. It is far greater than the nystagmus produced by the familiar caloric and Barany rotation tests and more active than the spontaneous nystagmus of albinos or that due to labyrinthitis. Unlike spontaneous nystagmus, which is present in the normal resting position and is not changed regardless of change of position, positional nystagmus occurs only when a certain position is assumed or upon a change of position. Positional nystagmus is not the same as that produced by the head-shaking test.

Tests for Positional Nystagmus. To observe a patient for positional nystagmus, attempt is made to put him in a position that will induce the dizziness of which he complains. In most cases this can be done simply by having the patient sit on a table and then go into the recumbent position and turn his head to the right or to the left. The motion may be carried out at varying rates of speed, but never with a violent jerk or twist of the head. Sometimes the nystagmus is latent—that is, it does not appear for five or ten seconds after the head is turned. Occasionally, hanging the head over the edge of the table may be necessary to elicit the movement, or patients who have dizziness when they stoop may be put in that position.

Frequently the patient will let the physician know when the dizziness starts and stops, and it can be observed that the nystagmus starts and stops simultaneously with the dizziness. The patient is often very apprehensive and may have pronounced sweating and pallor. Apparently the sensation is a frightening one, for many patients grasp the physician's arm at the onset of vertigo. Often patients close their eyes tightly, which makes it difficult to see the active nystagmus. However, it is possible to observe movements of the eyes beneath tightly closed lids. The nystagmus, which may last for from five seconds to a minute or more, is wild and active, and often it is difficult to determine whether the movement is horizontal, rotatory, or vertical.

It is extremely important that a patient who complains of postural vertigo be examined repeatedly, for quite often positional nystagmus will not be elicited the first two or three times the tests are car-

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ried out. This explains why one physician may report nystagmus (to an insurance company, for example), whereas another physician who has not elicited nystagmus may report no objective evidence of dizziness.

Pathologic factors and the mechanism by which positional nystagmus is produced were recently discussed in detail by Lindsay.[1]

There are three general classifications of cases of positional nystagmus. One comprises cases owing to disease involving the peripheral eighth nerve mechanism, which are of interest primarily to otologists. In a second group are cases of apparently spontaneous onset marked by repeated attacks off and on for several years, with no other objective findings of dizziness or of disease which might cause dizziness. It is probable that the condition derives from some vascular or vasomotor disturbance — most likely originating in the central nervous system, as the positional nystagmus is frequently of vertical type. Emotional factors may play a large part in such cases.

The third group comprises cases in which there is known to be severe head injury or other disease affecting the central nervous system, such as brain tumor or multiple sclerosis. In such cases a neurologist must determine the importance of positional nystagmus in relationship to other neurological findings. Positional nystagmus alone is not diagnostic of brain tumor or other disease of the central nervous system, but it may be one of the earliest signs of such a condition. It should be emphasized that positional nystagmus may be the only neurological sign of abnormality in a patient after convalescence from injury to the head and it may be the only objective evidence that the patient has incapacitating dizziness. In such circumstances the patient should be warned against work in which dizziness would be a hazard.

THERAPY

Except for those cases in which the dizziness is caused by peripheral disease of the ear or by disease of the central nervous system such as a brain tumor or head injury, there is no specific treatment. Use of Dramamine® and salt-free diet is ineffective. However, since many patients are greatly worried about the condition, it is important to reassure them, when no cause has been found, that they do not have a progressive degenerative disease and probably will gradually get well. Reassured, patients may accustom themselves to occasional dizziness so that they are not incapacitated.

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Discussion by **GILLIS A. ESSLINGER, M.D.,** *Berkeley*

I agree with Dr. Fletcher that this condition is quite elusive. It is often as elusive as convulsive seizures so far as a physician's direct observation is concerned. Many times the physician is the last one to have the opportunity to give a personal account of an episode in a particular patient.

For this reason I also agree with Dr. Fletcher that frequent visits may be necessary and actual testing must be done. It seems to me according to my own experience that the objective evidence of the vertigo as indicated by the nystagmus may be more often elicited on the first visit and may not be as evident on subsequent visits. This may be evidence that increased emotional tone may favor the production of an episode through slight increase in irritability generally of the nervous system.

Through the work of Ernest Spiegel and other investigators it was found by a process of gradually eliminating different parts of the central nervous system that only a small portion of the nervous system is essential to the production of nystagmus. Specifically this includes the vestibular nucleus, the median longitudinal fasciculus, the nuclei of cranial nerves three, four and six and their peripheral extensions to their respective muscles.

Leidler about 1935 in reviewing over two hundred of his cases ascribed the severest vertigo to lesions of the eighth cranial nerve foot fibers and the adjoining brain stem.

De Kleyne about 1928 mentioned interference with the circulation of the vertebral artery in positions of extreme extension of the neck. This he felt was particularly true when the auricular artery was a direct branch from the vertebral artery. This may account for some of the cases of postural vertigo and positional nystagmus found in some types of cervical vertebra fracture and in platyhasia.

Recent work of Groat and Simmons (1950) reveals when actual ganglion cell counts are done on guinea pigs suffering from concussion actual cell deficits are found. They examined some of their animals as late as thirteen months after injury. It was revealed that the greatest cell deficit from concussion occurred in the cells of the vestibular nucleus, reticular formation in the interior of the brain stem and the red nucleus. Cell deficits were found in every case of concussion. It was also of interest in this particular publication that the animals injured by concussion showed evidence of disturbance in behavior. Animals previously trained to run a maze appeared confused and unable to run the maze successfully without further training. It was also found that it was more difficult to train these animals to run a new maze and there was a tendency for them to forget their learning. It was found that this inefficiency persisted as long as thirty to ninety days.

It is felt that there may be a correlation in these bits of information with regard to a cause within the central nervous system in cases with the syndrome of this kind.

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Discussion by **VICTOR GOODHILL, M.D.,** *Los Angeles*

Postural vertigo and positional nystagmus are symptoms of vestibular pathway hypersensitivity due to abnormal physiological stresses induced by postural changes. Dr. Fletcher has very clearly defined and illustrated these phenomena and the techniques by which they may be elicited. He has clearly indicated their variability and the necessity for repeated examination in some cases.

The elicitation of postural vertigo and positional nystagmus, however, should be considered as part of the investigation of labyrinth function. It should be preceded by routine otoscopic examination, audiometric studies and examination for spontaneous nystagmus, both overt and latent.

The phenomena of postural vertigo and positional nystagmus are *symptoms* of vestibular pathway dysfunction. They are not clinical entities. The demonstration of postural vertigo and positional nystagmus in both peripheral and central disturbances of the vestibular pathway detracts from any localizing value in diagnosis.

The elaborate classifications of Nylen and others into "direction changing" and "direction fixed" types, have failed to yield localizing diagnostic data. The fact that repeated examination is necessary to elicit the response in many cases, speaks for a functional rather than an organic origin.

A curious fact has been mentioned by some investigators, recently Rucker of the Mayo Clinic. He has found the phenomenon more common in cases where the head is turned to the right in repose. He thus advises his patients to lie down with the head turned to the left. No explanation for this unilateral preponderance has been made.

In the elicitation of this phenomenon it is advisable to use plus 20 lenses in some cases to eliminate fixation and to amplify eyeball motions, as we frequently do in caloric testing.

In analyzing studies of vestibular dysfunction, it is helpful to think of:

a. Spontaneous nystagmus as evidence of constant hyperirritability and therefore organic.

b. Positional nystagmus as evidence of intermittent hyperirritability, and therefore probably functional.

c. Caloric—induced nystagmus — produced by abnormal stimulation.

d. Rotation—induced nystagmus — produced by hyperstimulation.

* * *

Concluding Remarks of DR. FLETCHER

I wish to thank the discussants for their comments. Although I agree that positional nystagmus alone may not be diagnostic in localizing a lesion, this may be due to the fact that the medical profession has so far failed to find pathologic change to account for such nystagmus in all cases. I do not agree with the statement that "positional nystagmus is evidence of intermittent hyperirritability and is therefore probably functional." Epilepsy is intermittent irritability, but surely not functional. No normal person can produce positional nystagmus. A patient who has positional nystagmus following a severe head injury has objective evidence of severe dizziness which surely should not be classified as functional.

Doctor, You've Just Received a Letter

Not many days ago you received a letter from Dr. Louis H. Bauer, president of the American Medical Association, in which the suggestion was made that you consider a donation to the American Medical Education Foundation as a matter related to your income tax.

Remember, this year for the *first* time you may contribute up to 20 per cent of your adjusted gross income to certain educational and philanthropic organizations, and deduct the amount given—*before* computing your tax. The American Medical Education Foundation, your own foundation, is one of the organizations to which you may make tax-deductible contributions.

Pull Dr. Bauer's letter from your file and reread it carefully. Why not, as income tax time approaches, make a gift in the form of a contribution to the A.M.E.F.? By scanning your tax status, you may find that with surprising ease you can handsomely help your own foundation, whose funds you *know* are wholesomely allotted.

You can find no finer project to receive your helpful, well-wishing dollars. . . . Help yourself and your medical school by sending Dr. Bauer your answer to his letter—your answer in the form of a check. Earmark your contribution for the medical school of your choice or give it to the general fund. You'll feel good knowing that every last cent of every dollar you give goes to the medical schools.

John W. Green, M.D., *Chairman, California,*
American Medical Education Foundation

Scintigrams of the Thyroid Gland

The Diagnosis of Morphologic Abnormalities with I^{131}

FRANZ K. BAUER, M.D., WILLIAM E. GOODWIN, M.D., THOMAS F. BARRETT, M.D., RAYMOND L. LIBBY, Ph.D., and BENEDICT CASSEN, Ph.D., ***Los Angeles***

• *Functioning thyroid tissue containing sufficient radioiodine can be visualized by scanning the gland with a directional scintillation counter.[4] This visual representation of the gland is called a "scintigram." Scintigrams have been invaluable in the detection and study of both "toxic" and non-functioning nodules, diffuse enlargement in hyperthyroidism and the subsequent reduction in gland size after treatment, carcinoma, and aberrant thyroid tissue.*

The use of a directional scintillation counter to detect the presence of I^{131} in the thyroid gland and to produce a visual representation of the gland—a "scintigram"—for the study of certain morphological characteristics has been presented in previous reports.[3, 6] It is the purpose of this paper to give the indications for a scintigram and its clinical applications.

METHOD

The directional scintillation counter is designed for localization and therefore has a much narrower field than the scintillation counter used for uptake studies. Thus larger amounts of I^{131} in the thyroid gland—60 to 80 microcuries—are desirable for the production of a scintigram. For this purpose a dose of 100 to 300 microcuries of carrier-free I^{131}, the amount depending upon the avidity of the gland for the substance, is administered orally in a capsule.[8] This dose is comparable to those previously considered to be in the tracer range.

The scintigram is done 24 to 48 hours after administration of the radioiodine; for hyperthyroid patients 24 hours is preferable. The patient is immobilized in a comfortable position and the scanning tube is run over the neck or other area where functioning tissue is thought to be present. The scaling circuit can be adjusted so that the printing relay will record every second, fourth, eighth, sixteenth, thirty-second or sixty-fourth count. Thus areas containing I^{131} can be recorded at centers about a millimeter apart, while wider spacing occurs where no iodine is accumulated (Figure 1).

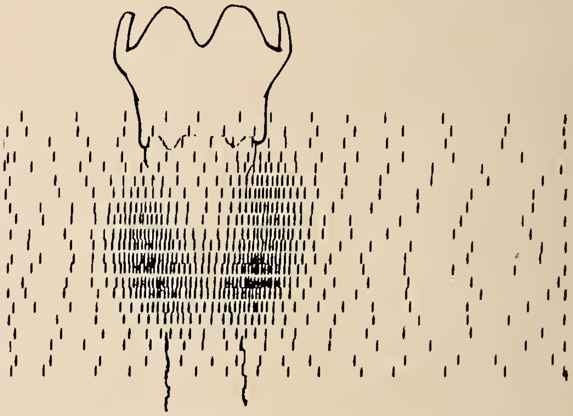

Figure 1.—Scintigram of a latex model of a normal human thyroid gland. The trachea and larynx are sketched in diagrammatically.

INDICATIONS

Outlining the thyroid gland has become a routine procedure in Wadsworth General Hospital and is used, only on the recommendation of the hospital's radioisotope committee, for obtaining diagnostic information in the following conditions:

1. *Hyperthyroidism*

The differentiation of diffuse enlargement from "toxic" nodules cannot always be solved by palpation. It is well known that patients with "toxic" nodules who are clinically hyperthyroid may have a normal uptake of I^{131}. "Toxic" nodules appear as dense areas on the scintigram (Figure 2), while the remainder of the gland often is not apparent because of suppression of function.[5]

Diffusely enlarged glands (Figure 3) can be visualized and the correct weight of the gland can be

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Presented before the Section on General Medicine at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

estimated by the formula of Allen and Goodwin.[1] The validity of this formula has been further confirmed by recent and as yet unpublished observations on thyroid glands which were removed shortly after scintigrams had been made. The same method of estimation may be used to determine shrinkage of a diffusely enlarged gland following therapy with I^{131}, and also to determine the amount of thyroid tissue remaining in patients who have recurrence of hyperthyroidism following partial thyroidectomy (Figure 4).

2. *Simple goiter*

This may include substernal extension of the thyroid gland (Figure 5).

3. *Solitary or multiple nodules*

While in many cases only a solitary nodule (Figure 6) is palpable, the presence of more than one "non-functioning" area can be demonstrated by outlining. Because solitary nodules, particularly the "non-functioning" which do not accumulate I^{131},

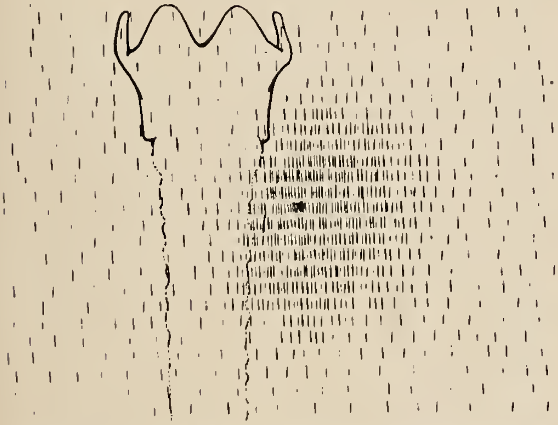


Figure 2.—Scintigram of "toxic" thyroid adenoma in a patient with hyperthyroidism. Note suppression of I^{131} accumulation in the remainder of the thyroid gland.

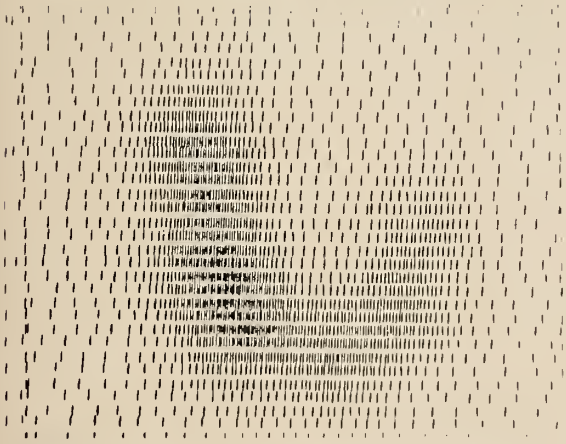


Figure 3.—Scintigram of a diffusely enlarged thyroid gland in a patient with hyperthyroidism.

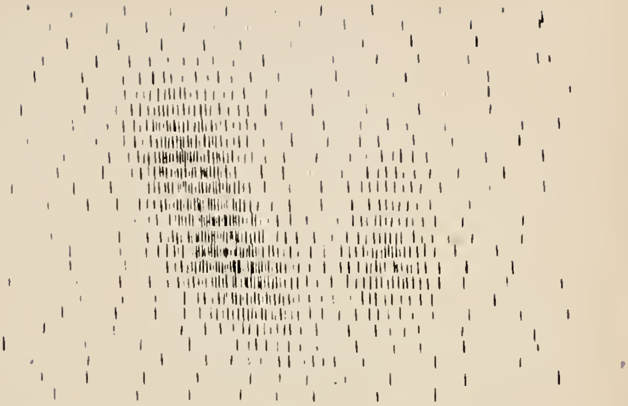
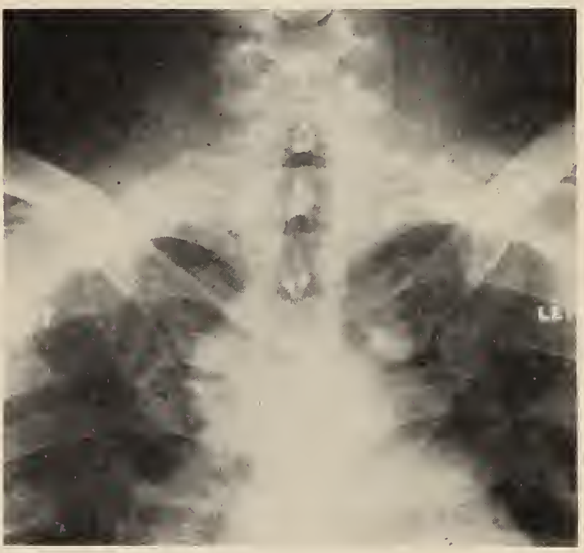


Figure 4.—Scintigram of the thyroid gland of a patient with recurrent hyperthyroidism in whom most of the left lobe had been removed previously.



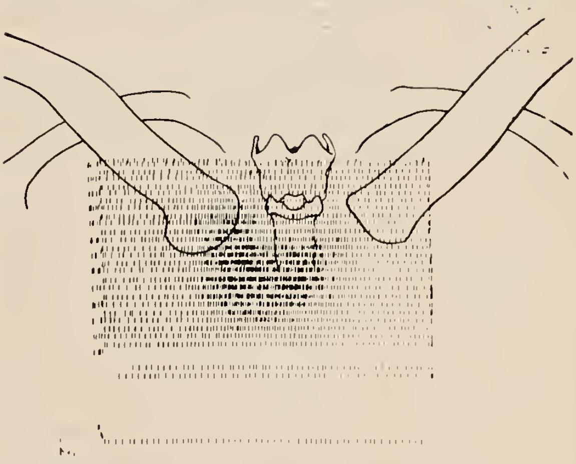


Figure 5.—*Upper,* note the superior mediastinal mass. *Lower,* scintigram of the superior mediastinal mass with clavicles, first ribs, larynx and trachea sketched in diagrammatically.

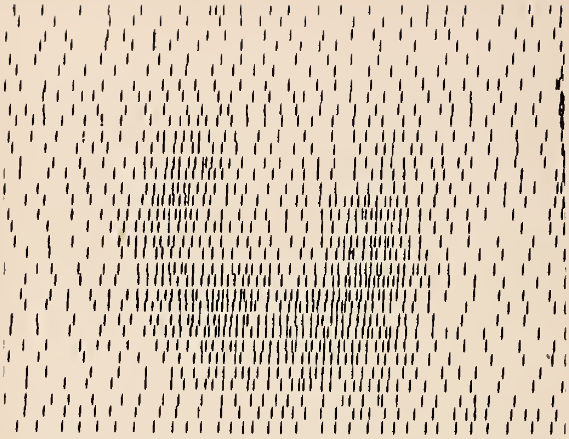


Figure 6.—Scintigram of the thyroid gland of a patient with a "non-functioning" adenoma arising from the right lobe of the thyroid and displacing this lobe posteriorly and upwards.

are, it is believed, more frequently associated with carcinoma of the thyroid gland, the demonstration of these nodules is extremely important.

4. *Carcinoma of thyroid gland*

Only about one in seven carcinomas of the thyroid gland accumulates radioiodine, but where the primary lesion is susceptible, metastases which accumulate radioiodine may likewise be studied by the scintigram. In many cases after removal of a cancerous thyroid gland the metastases which previously did not accumulate radioiodine do so. Sometimes this action in the metastases can also be stimulated by the administration of thiouracil and thyroid stimulating hormone (TSH). Under all these conditions the outlining procedure is very helpful.

5. *Aberrant thyroid tissue*

Figure 7 illustrates the use of the scintigram to demonstrate this condition.

ACKNOWLEDGMENT

The authors are indebted to Lucille E. Shoop, R.N., and Elsie M. Youtcheff, B.A., for their help in handling the patients and obtaining the scintigrams.

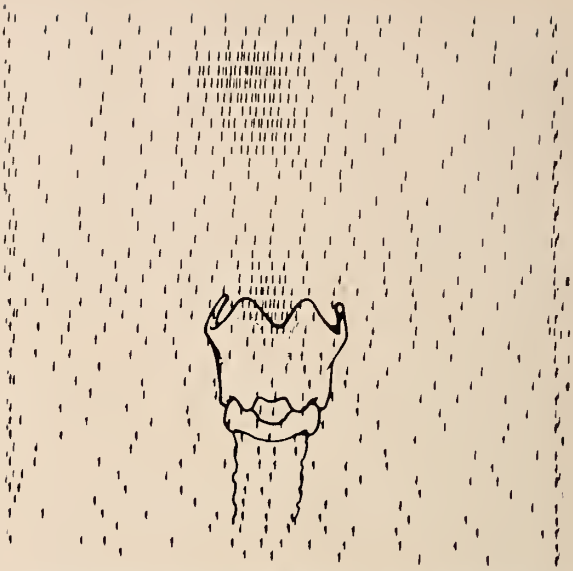


Figure 7.—Scintigram of sublingual and prelaryngeal thyroid tissue in a patient who had had tbyroidectomy for non-toxic goiter several years before.

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Acute and Chronic Barbiturate Intoxication

Recent Advances in Therapeutic Management

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• *The increase of addiction to barbiturates and in the number of deaths from overdoses constitutes a growing and serious health problem.*

Although the symptoms of both acute and chronic barbiturate intoxication resemble those of other drug intoxications, correct diagnosis can be made through an accurate history, a physical examination and the finding of increased nonprotein nitrogen in the blood and of a characteristic fast pattern in an electroencephalogram.

Metrazol® and electrostimulation, with adjuvant therapy, are discussed as the most advantageous methods of treating acute barbiturate intoxication; the addition of emetics to barbiturates to prevent overdosage is considered.

Carefully controlled withdrawal and psychiatric rehabilitation are necessary to treatment of addiction, but as patients are usually uncooperative the prognosis is poor.

THE PROBLEM of barbiturate intoxication is a matter of growing public concern because of increases in addiction, suicides and accidental poisoning due to the use of the drugs. The danger of acute intoxication has been recognized since the introduction of barbiturate drugs in 1903. whereas addiction to barbiturates has been recognized in the United States as a clinical entity only since 1949.[2]

The extent of the problem is hard to describe completely. In 1948 over 300 tons of barbiturate drugs were produced and sold to the public—a 400 per cent increase over the output in 1933.[8] In 1951 barbiturates caused more than 1,000 recorded deaths, as compared with 520 in 1944. In 25 per cent of all cases in which persons are admitted to general hospitals because of acute poisoning, barbiturates are the intoxicant.[7] Current insurance statistics indicate that barbiturates are the agents of death in 6 per cent of suicides and 18 per cent of accidental deaths of policyholders. These figures do not include the untold number of attempts at suicide by the use of the drugs and of deaths in which they were an unrecognized factor. The incidence of barbiturate addiction is unknown but is suggested by the increasing number of admittances for barbiturate psychosis to all hospitals.

In the authors' experience in a private 200-bed general hospital, there has been an increasing number of patients admitted with addiction or after an attempted suicide by an overdose of barbiturates. In 1951 a total of 45 patients were treated, 38 in the emergency department for an overdose of barbiturates and seven in the psychiatric department for chronic barbiturate intoxication and addiction.

The following case history is characteristic of patients admitted to the psychiatric service:

The patient was a 42-year-old woman who had a long background of insecurity, with early childhood responsibilities. For many years her physical health and many somatic complaints had preoccupied her. Her lifelong insecurity was aggravated when in 1948 a chronic illness developed in her husband, who was passive, dependent, and unaffectionate. She began to take large doses of aspirin, and by 1951, when the aspirin was no longer effective, she began taking phenobarbital. From time to time she took moderate overdoses. Nystagmus, staggering gait and loss of coordination developed, and the patient was twice examined because of those conditions. Since she told no one of the self-medication, a brain tumor was suspected. Early in 1950 she was severely constipated and had only four bowel movements in a month. The condition was diagnosed by a consultant as a partial bowel obstruction. In 1951 the family physician, after explaining to the husband that he felt the only value was psychologic, did a laparotomy. No abnormality was noted except for a cyst of the right ovary, which was removed. Postoperatively the patient complained of excruciating pains, demanded frequent hypodermic injections, and finally became so quarrelsome and antagonistic that the hospital, at her request, released her. She returned to the hospital two days later, at which time slurred speech and staggering gait were noted. After a two-week stay she returned home but again became uncooperative. She continued to take large doses of phenobarbital, increasing the dose to 0.06 gm. of the drug, and then to twice that amount, every hour. The patient then became more irritable, threatened to kill members of the family, smashed objects, became combative and had to be restrained. She could not sleep, became paranoid towards her husband, and at times misinterpreted her surroundings. Psychiatric help was sought.

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Presented before the Section on Psychiatry and Neurology at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

The patient upon admission to the psychiatric section of the hospital was malnourished and unkempt, and appeared to be much older than her stated age. Her gait was ataxic and her speech slurred; she could not accurately recall recent events, and she expressed great hatred and bitterness toward her husband. On a withdrawal program she had an uneventful stay in the hospital.

The case reported well illustrates some of the features of barbiturate addiction: first, the presence of emotional problems partially relieved by barbiturates either prescribed by a doctor or resorted to by the patient himself; second, gradual increase of dosage for greater relief of tension, with resultant intoxication which is manifested by mental and neurologic signs; third, impairment of judgment, which leads to ingestion of larger and larger doses, and fourth, partial tolerance to the drug. The case also illustrates difficulties in diagnosing chronic barbiturate intoxication.

In a general hospital other aspects of the barbiturate problem may be encountered. A restless patient may receive large and increasing doses of barbiturates after an operation or during acute illness, until mild toxic delirium develops; in the attempt to control this delirium more barbiturates are given and a vicious circle is created. Another difficulty is that of patients who obtain barbiturates from each of several physicians. One patient treated by the authors had regularly visited fourteen physicians—one each day; each gave her a barbiturate prescription to last until the next visit two weeks later, providing her with a large daily dose. Some physicians fail to recognize that chronic sleeplessness generally indicates chronic emotional tension; by prescribing barbiturates for this condition they start many patients on the road to addiction. Addicts to alcohol may also become addicted to barbiturates. They first use barbiturates to relieve tension following a prolonged drinking bout and then continue to use the drugs to help relieve their chronically high emotional tension.

SYMPTOMS

The symptoms of severe acute barbiturate poisoning are stupor or coma, slow and shallow respiration, weak and thready pulse, dilation of pupils (which are small and reactionless in extreme cases), flaccidity of limbs and absence of tendon reflexes. Babinski's sign may be present. The cerebellar signs are nystagmus, asynergy and adiadokokinesis. Convulsions may occur. If the intoxication is not severe the patient may be drowsy, disoriented and unperceptive; in some cases he may be euphoric.

Signs of psychic disturbance owing to chronic barbiturate intoxication include impairment of thinking, mild confusion, loss of good social judgment and emotional instability characterized particularly by hyperirritability and pronounced emotional dependence. Observable upon physical examination are mask-like facies, physical debilitation, ataxic gait, tremor, loss of coordination, dysarthria, hypotonia and nystagmus. If partial tolerance to the drug develops the patient may take increasingly large doses without pronounced effect. In some addicts a condition known as automatism occurs, when barbiturates are rapidly and continuously ingested until coma or death results. In an electroencephalogram taken during chronic barbiturate intoxication an increased proportion of waves with a frequency of 15 to 30 per second can be observed.

In chronic barbiturate intoxication there develops a typical abstinence syndrome after sudden reduction or withdrawal of the drug. Within one to five days grand mal seizures occur in some patients; in others full blown psychosis develops, and in a few patients both convulsions and psychosis occur. The psychotic reactions are fundamentally toxic delirium states but their content varies according to the premorbid personality structure. The authors have observed paranoid reactions; reactions resembling schizophrenia with delusions and hallucinations; withdrawn semi-stuporous states; confabulatory states, and disorganized panic. In many patients premonitory signs such as intense diffuse anxiety, restlessness, dulling of the sensorium and various kinds of dyskinesia precede the convulsion or psychotic reaction.

DIFFERENTIAL DIAGNOSIS

Acute barbiturate intoxication may be confused with alcoholism, bromide intoxication, various neurologic disorders, and certain other disorders causing coma. Barbiturate addiction in its milder forms may be confused with various kinds of psychoneurosis, especially anxiety states and hysteria. The more severe addiction can be confused with organic psychotic states, especially Korsakoff's psychosis, because of the clouded sensorium and confabulation; with schizophrenoid reactions because of the hallucinatory-delusional state; and with alcoholic delirium tremens or epilepsy. An accurate history and a physical examination, in addition to the finding of increased nonprotein nitrogen in the blood and of a characteristic fast pattern in an electroencephalogram, should lead to the diagnosis.

The following case illustrates some of the points in diagnosis:

A 51-year-old woman was admitted to the hospital for chronic alcoholism extending over the past 25 years. She had been given small doses of phenobarbital for the last four years for moderate vascular hypertension, and on her own initiative had increased the dosage to an unknown amount. In the preceding year she had had two unexplained grand mal seizures. In an electroencephalogram taken on the third day of hospitalization the dominant frequencies were 18 to 20 per second in spiky bursts, and occasionally there was slower activity of 5 to 8 per second. The faster components predominated in the frontal areas and a higher voltage in the posterior areas—a pattern characteristic of the influence of barbiturates.

The patient was placed on a withdrawal regimen. A second electroencephalogram taken seven days after admittance still gave some evidence of barbiturate influence, but to lesser degree: Paroxysmal waves of very high voltage spike and slow wave activity appeared, the highest amplitude of which was in the frontal areas. It was not certain whether this pattern resulted from barbiturate withdrawal or from idiopathic cerebral dysrhythmia. Although the patient was thereafter given larger doses of barbiturates, a grand mal seizure occurred within a few hours. Fifteen days after admittance a third electroencephalogram was free of the typical barbiturate pattern, but the paroxysmal activity observed in the previous recording was present.

There appears to be little fundamental difference, psychodynamically, between barbiturate addiction and addiction to other intoxicants. Many addicts to drugs have intense infantile fixations, and barbiturate addicts are no exception. Barbiturate action, different from that of morphine, is similar to alcohol in its disintegrating effects on repression. Finer differences may exist between the basic emotional patterns in one kind of addiction and in another, but as the patterns have not been fully determined, it is not yet possible to differentiate the emotional dynamics of barbiturate addicts from those of alcohol, narcotic or food addicts.

TREATMENT

The treatment of acute barbiturate poisoning has never been completely satisfactory. Several antagonistic agents have been used without complete success to oxidate and detoxify the barbiturate compound in the body. Picrotoxin, long considered the drug of choice in barbiturate poisoning, has dangerous effects, particularly of convulsions which may lead to death. In 1950 Jones and co-workers[3] emphasized the use of Metrazol® for barbiturate poisoning. The authors have likewise found it superior to picrotoxin when administered as recommended by Jones: intravenous administration of 5 cc. of Metrazol, followed in 15 minutes, unless reflexes return, by 10 cc., and thereafter by 20 cc. every 30 minutes until reflexes return. Small doses can then be given intramuscularly until the patient is fully conscious. Since the maximum effect is obtained almost immediately (picrotoxin acts more slowly), there is less danger of overdosage and resultant convulsions.

Supportive therapy is important. Lavage and purgation are frequently used but increase the risk of hypostatic pneumonia. Emetics should not be given to an unconscious patient. Hypotonic saline solution can be given intravenously in order to overcome dehydration if there is no cardiac difficulty or pulmonary edema. Antibiotics and intratracheal intubation are useful adjuncts in countering hypostatic and aspiration pneumonia. Acute left ventricular failure develops in some patients and if not adequately and quickly treated can be a contributory cause of death.

The most recent addition to therapy occurred in 1951 when Robie observed that a patient anesthetized with Pentothal® was quickly awakened by nonconvulsive electrostimulation.[6] He later successfully used this method to treat patients who had taken an overdose of barbiturates. The authors used this method on nine patients and found it of value in treating some of them. The method is simple: A Reiter CW-47 electrostimulator is applied and the current maintained at 2 to 3 milliamperes until the patient begins to awaken.

The greatest difficulty encountered has been with patients who are in profound coma with reflexes absent at the time of admittance; with them no single method of treatment has been entirely successful. The following reports of cases point to some of the advantages and difficulties of either Metrazol or electrostimulation:

A 30-year-old woman who had taken an unknown amount of barbiturates was admitted in coma to the emergency service. The pupils were small and fixed and no deep or corneal reflexes were present. Electrostimulation was used for two and one-half hours. At the end of that time all reflexes had returned, although the patient remained unconscious. After a two-hour interval electrostimulation was resumed for brief intermittent periods. Eight hours after the beginning of electrostimulation all the reflexes had returned and the patient was moving spontaneously. The patient recovered completely.

Another patient, a 21-year-old female university student who had taken 3.0 gm. of phenobarbital was admitted to the hospital in coma and with reflexes absent. After electrostimulation had been given for six hours the patient responded to painful stimuli, the deep reflexes had returned and ankle clonus and Babinski's sign were present. Despite continued electrostimulation, the patient lapsed into deeper coma and again became areflexic. Metrazol administration was begun and within an hour the deep reflexes had returned. No further electrostimulation was given, but Metrazol administration was continued, and within 36 hours after it was begun the patient was completely conscious.

In two other cases patients treated first with electrostimulation became refractory to it and lapsed into deeper coma which was later successfully treated with Metrazol. Apparently tolerance developed over the parietal regions. Perhaps the tolerance might not have developed if the electrodes had been moved over the skull, as in a case reported by Pinch and Geoghegan,[5] and electrostimulation might have aroused the patients. In the case of a woman aged 60, admitted in deep coma and areflexic, Metrazol treatment was begun and continued twelve hours without response, after which a succeeding physician substituted electrostimulation for Metrazol. The patient did not respond and died twelve hours later.

Prevention of barbiturate overdosage through the addition of an emetic to all barbiturate preparations has been suggested from time to time. Some preparations now on the market contain ipecac, a drug not free of systemic toxicity. It must be noted that barbiturates are rapidly absorbed and may depress the emetic nerve centers. Recent animal experiments suggest that zinc sulfate (which is nontoxic) might be effective in producing emesis because of its local and faster action.[4] Other preventive measures include stricter laws governing the sale and procurement of barbiturates and widespread education of physicians and the public to the dangers involved.

The treatment of barbiturate addiction is at present divided into two phases—withdrawal of the drug and rehabilitation with psychotherapy.

The following case illustrates the difficulties of withdrawal of the drug:

A professional man aged 36 was admitted to the hospital psychiatric department expressly for relief of addiction to barbiturates. Upon admittance the patient seemed moderately cooperative. Not until later did he admit that he had been taking 1.0 gm. of a seconal-amytal sodium compound daily. The gait was unsteady, the speech was thick and slow and movements not well coordinated. In a rather rapid withdrawal program the patient was relieved of all symptoms of intoxication by the third day and seemed relaxed, pleasant and cooperative. On the fifth day, however, he was extremely tense and anxious, having slept only two hours the night before. Later that day he imagined he heard people outside his door defaming him and plotting against his life. He became anxious to the point of panic, although his sensorium remained clear, and he spontaneously said he must be deluded. The withdrawal dosage was increased and in 24 hours the psychotic episode had passed.

It is notable that a psychotic reaction developed in this patient despite the immediate use of a withdrawal treatment program. The authors believe now that too rapid withdrawal of the drug caused this reaction, since it terminated when the drug was increased. Barbiturate addicts, like alcoholics, often misrepresent their daily intake of drugs and insist on a short hospital stay, thus causing adoption of a rapid withdrawal program. Hospitalization in a closed psychiatric section and slow withdrawal are mandatory in the experience of the authors, who have adopted the program outlined by Isbell:[1] At first the patient receives 0.2 to 0.4 gm. of pentobarbital orally every six hours to maintain continuously a mild degree of intoxication. After two days the dosage is reduced not more than 0.9 gm. daily. Full withdrawal takes two to four weeks. If premonitory signs of the abstinence syndrome develop, reduction of dosage is stopped until the signs clear. Supportive measures, including proper fluid balance, adequate diet and careful nursing care, are important. During and after withdrawal, psychotherapy must be undertaken. The early infantile fixations of many addicts make psychotherapy very difficult at best and the prognosis extremely doubtful. Symptomatic addiction secondary to reactive situational factors in patients ignorant of the potential seriousness of barbiturism may sometimes be more successfully treated. (The authors treated a physician who became addicted to barbiturates during depressive psychosis. Successful treatment of the depression relieved the barbiturate addiction.)

Of the seven barbiturate addicts treated in 1951, six quickly broke off psychiatric treatment upon release from the hospital. The one patient who attempted to work out her problem through psychotherapy later resumed addiction and died of an overdose of the drug. Following is a report of the case:

A 44-year-old registered nurse was admitted to the hospital for barbiturate addiction of five years' duration. The amount of barbiturates she had been taking daily was not known. The withdrawal period was uneventful, and daily psychotherapy was carried on during the six weeks the patient was in the hospital. She had considerable hostility toward her husband and felt insecure and frustrated in her marriage. During the six-week period she had worked through some of her problems and seemed improved. However, within three weeks after her return home she again began to take barbiturates. One night four weeks later, in an apparent state of automatism, she broke into a hospital pharmacy, consumed a lethal dose of phenobarbital and was found dead the next day.

This case shows not only failure in treatment but also the impaired judgment which leads barbiturate addicts to continuous dosage until death occurs without conscious suicidal intent.

2000 Dwight Way.

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Cortisone and Corticotropin in Allergic Disease

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• *Cortisone and corticotropin (ACTH) in adequate doses usually promptly relieve allergic rhinitis, bronchial asthma, atopic eczema, urticaria, drug reactions and poison oak and ivy dermatitis. However, as the symptoms recur upon discontinuance of the hormones, and long-continued use entails certain hazards, it is necessary to determine the underlying allergic cause of the symptoms and to institute measures to overcome it. However, when adequate antiallergic treatment does not control symptoms, the continued use of small doses of these steroids or of larger doses for weeks or months in severe or intractable cases is justified.*

In the few cases in which prolonged use of these hormones is necessary, the patient ought to be told of the possible complications, of the expense of laboratory studies that must be carried out, and of the cost of the hormones.

Cortisone and corticotropin (ACTH) in adequate doses have proven highly effective in producing prompt and dramatic relief of allergic rhinitis, bronchial asthma, atopic eczema, urticaria, drug reactions and poison oak and poison ivy dermatitis. Adequate treatment over a period of two to six weeks may produce remissions varying from several days to two or three months. When these agents are employed alone without specific antiallergic therapy, lasting relief is rarely obtained, and retreatment on one or more occasions is usually necessary. Patients treated on one or more occasions with one or both hormones with only temporary resulting benefit are being encountered with increasing frequency. The study and control of underlying allergic conditions, therefore, remains as the only effective means of controlling these disorders without continued steroid therapy.

If allergic rhinitis, bronchial asthma, eczema and urticaria are effectively controlled by these hormones, why is their repeated or continuous use inadvisable? (1) The underlying condition, the allergy upon which the reactions are based, is not permanently abated. (2) Although the reactions to cutaneous tests are not altered by these steroids, the results of specific therapeutic tests — diet trial, environmental tests, and antiallergic therapy — are difficult to evaluate because of the blocking effect of these drugs on shock tissues. (3) The effectiveness of the hormones may decrease with repeated or continued use. (4) The danger of therapeutic complications is ever present. (5) Although rare, sensitization to either hormone may arise. (6) Without prophylactic chemotherapy, there is danger of masked infection arising during therapy.

Despite these disadvantages, cortisone and corticotropin have important and specific roles in the treatment of allergic diseases. (1) As life-saving aids in severe asthma or angioneurotic edema. (2) To control or decrease incapacitating symptoms until antiallergic or other treatment is effective. (3) To control symptoms resistant to antiallergic and other treatment when there is full recognition by patient and physician of the possibility of development of complications, exacerbation of symptoms on cessation of treatment and possible ultimate resistance to therapy. (4) In the treatment of certain self-limited syndromes, such as poison oak or drug dermatitis, urticaria, allergic rhinitis or bronchial asthma resulting from short exposures to large amounts of inhalants, urticaria or angioneurotic edema from medications or food and in serum sickness.

Preparation of patients for treatment

The physician must inform the patient regarding the foregoing advantages and disadvantages of steroid therapy. The patient should be told that in all probability relief of symptoms will be only temporary and the treatment is intended only to span the gap until antiallergic therapy is effective; that exacerbation is likely to follow immediately upon discontinuance of these agents; that retreatment may be necessary; and that with repeated or prolonged use, effectiveness may decrease. The expense and the necessity for certain routine laboratory tests must also be known to the patient.

General considerations regarding administration

Current literature and manufacturers' brochures present details regarding optimum dosage, methods of administration and contraindications for therapy.

Observations upon use of these hormones in over 200 patients emphasized the necessity of adequate initial dosage. Dosage and duration of therapy should be dictated by the severity of symptoms alone rather than by the weight or the age of the patient. Adequate maintenance therapy should be continued over a period of not less than ten days in moderate or severe cases. In self-limited diseases such as poison oak dermatitis or drug reactions, the duration of treatment may be reduced.

Complications

Therapeutic complications were few in the present series. In two patients cortisone therapy was discontinued because of severe gastrointestinal disturbance manifested by heartburn, nausea, and vomiting. In one case an undiagnosed gastric ulcer perforated while the patient was receiving 50 mg. of cortisone daily. A gastric ulcer developed in a sister of that patient within one year of cessation of prolonged corticotropin and cortisone therapy. In one case cortisone caused pronounced edema and sudden hypertension on two occasions, necessitating cessation of treatment. In no case did hyperglycemia appear. Hyperactivity and pseudomania developed in one patient who was receiving cortisone, necessitating discontinuance of the hormone.

In one patient who was given corticotropin, severe angioneurotic edema and urticaria developed within 24 hours after therapy was begun. Acute, disseminated, eczematoid dermatitis developed within 36 hours in another case, and eight patients with severe eczema had subcutaneous abscesses at injection sites despite sterile precautions.

Providing close observation is possible, hospitalization is not necessary. When infection is known or suspected, concomitant antibiotic therapy is mandatory. If edema and hypertension arise during treatment, discontinuance is advisable. However, when continued therapy is required, the use of a salt-free diet, of potassium chloride, and of mercurial diuretics will, in most instances, relieve these complications. Because of the catabolic effects of these steroids, especially the production of nitrogen wastage and hypokaliemia, a high protein diet (125 to 150 gm. daily) and supplementary potassium (5 to 10 gm. of potassium chloride daily) should be prescribed for patients receiving 50 mg. or more of cortisone or 20 mg. or more of corticotropin daily. When prolonged therapy is necessary, periodic x-ray examination of the upper gastrointestinal tract is advisable.

As in the treatment of rheumatoid arthritis,[1] the withdrawal syndrome frequently appears in patients given steroid treatment for chronic allergic disease. With reduction of dosage, symptoms are frequently exaggerated temporarily. Slow reduction of dosage, therefore, is advisable to allow the necessary metabolic, endocrinologic, and psychologic adjustments to occur. When antiallergic therapy is ineffective, previous symptoms recur in most patients despite gradual reduction of dosage. In such cases, continued steroid therapy may be necessary. When antiallergic therapy is effective, however, gradual withdrawal may be accomplished with a minimum of difficulty.

CASE REPORTS

Case 1: A man 41 years of age complained of severe nasal congestion for five years. He had consulted several otolaryngologists and had received various forms of treatment without benefit. In March, 1950, a polypectomy was performed, with partial relief of obstruction. Within four months, however, recurrence of polyps was noted, and nasal congestion increased in severity. In addition to chronic daily postnasal discharge and blocking, there were intermittent severe attacks during which the nose was completely blocked, with associated profuse lacrimation, swelling of the eyelids, and burning sensation in the eyes. Except for frontal headaches associated with especially severe attacks, there were no other complaints.

In a history of the diet it was noted that citrus fruits in excess caused itching and eruption of various areas of the skin. The environmental history was non-contributory. The father of the patient had mild chronic nasal congestion.

No significant reactions to scratch tests with over 70 common ingestants and inhalants were noted. In intradermal testing with house dust extract, reactions began when a dilution of 1:50,000 was injected, and reaction to mixed fungus extract began when dilution of 1:500 was used.

Because food and environmental inhalant sensitivity was suspected, the authors' standardized cereal-free elimination diet[2, 3] was prescribed and environmental control established.

Severe symptoms persisted despite these measures. Cortisone was prescribed in doses of 100 mg. every six hours during the first day and 75 mg. every six hours during the second day. Within four hours after the first dose of cortisone there was definite reduction in the severity of nasal blocking. The dose of cortisone was gradually reduced over the next 12 days to a minimum of 12.5 mg. daily, after which it was discontinued. Desensitization therapy was carried out with a mixture of dust and fungus extracts. The patient was observed over a six-month period and had no recurrence of severe symptoms with the exception of severe nasal blocking for five days when milk was added to the diet.

Comment: Cortisone proved extremely valuable in the elimination of severe, incapacitating nasal congestion during early stages of treatment. Concomitant allergic treatment perpetuated this relief of nasal blocking.

Case 2: A woman 41 years of age was first observed in 1945 because of perennial nasal congestion present for four years, with sneezing, watery discharge, blocking of the nose and severe coryza without obvious seasonal variation. There was moderate coughing associated with the nasal congestion and occasional wheezing only during the late spring and early summer months. When skin testing by the scratch method was done there were 2-plus and 3-plus reactions to important tree, grass, and fall pollens and lesser reactions to environmental inhalants.

Initial treatment consisted of the use of the authors' standardized cereal-free elimination diet, the establishment of environmental control and desensitization with a multiple pollen extract and house dust extract. Food sensitivity gradually was eliminated as a cause. Although the perennial nasal congestion entirely disappeared, symptoms typical of hay fever reappeared in late April, May, and early June of 1946. For the next two years perennial pollen therapy was continued, without effect on the seasonal allergic rhinitis. During subsequent years the patient periodically returned for additional desensitization therapy, which was ineffective.

In late May, 1951, the patient returned seeking relief from her usual severe spring hay fever. At this time she was given cortisone in doses totalling 200 mg. the first day, 150 mg. the second day, 100 mg. the third day, and 75 mg. daily for six days thereafter. Within two days there was pronounced and dramatic symptomatic improvement. It was subsequently determined that a dose of 50 mg. every 12 hours was necessary to obtain continued symptomatic relief.

By August, 1951, it was possible to completely discontinue cortisone therapy.

Comment: Cortisone proved highly effective in controlling symptoms of severe seasonal allergic rhinitis due to pollen sensitivity. Repeated attempts at desensitization, both on a seasonal and preseasonal basis, had been unsuccessful. Other symptomatic medications had been ineffectual. It is anticipated that this patient will probably require repeated courses of cortisone during the late spring and early summer months.

Case 3: A 45-year-old man was first observed in November, 1951, because of recurrent, intermittent angioneurotic edema. The episodes had lasted about 48 hours until October, 1951, when angioneurotic edema again appeared and continued to recur daily. The patient consulted a physician early in November, and when antihistamines did not give adequate relief, cortisone in doses of 100 mg. orally every eight hours was prescribed. In 12 hours there was complete disappearance of the angioneurotic edema, but within 24 hours severe generalized urticaria appeared and angioneurotic edema reappeared. Cortisone therapy was continued for 36 hours, but because of severe persistent urticaria it was discontinued. The patient was hospitalized and given corticotropin in doses of 30 mg. daily by slow intravenous drip in 5 per cent glucose and water solution over an eight-hour period. With continued intravenous administration of corticotropin, the amount of which was gradually reduced to a minimum of 15 mg. daily, symptoms were completely controlled. With reduction of the dosage or cessation of therapy, angioneurotic edema and urticaria promptly reappeared within 24 hours.

Because of a daily rise in temperature to 101 degrees F., and persistently accelerated sedimentation rate (43 mm. in 1 hour, Wintrobe), and the persistence of leukocytosis (18,000 leukocytes per cu. mm.) with 85 per cent polymorphonuclear cells, of which 18 to 20 per cent were stab cells, an intensive search was made for infection. X-ray films of the chest, intravenous pyelograms, a gallbladder series, and a complete gastrointestinal series and studies with barium enema were normal. Infection involving the lower incisor and canine teeth was noted in x-ray films. Terramycin therapy was instituted and after one week the infected teeth were extracted. Following institution of terramycin therapy, there was moderate reduction in the severity of urticaria, but it was necessary to continue corticotropin therapy by intermittent intramuscular injection in doses of 10 mg. every eight to twelve hours daily to control symptoms. Acthar® gel in doses of 35 mg. daily was ineffectual.

Ten days after the extraction of the infected teeth, the patient became afebrile, the leukocyte content in the blood and the cell differential returned to normal and the sedimentation rate was 20 mm. in 1 hour (Wintrobe). It was then possible to control symptoms with 25 to 30 mg. of Acthar gel daily, given intramuscularly. The patient was discharged from the hospital on December 7, 1951. During the next seven days the dosage of Acthar gel was gradually reduced and finally was discontinued, whereupon urticaria and angioneurotic edema recurred and administration of Acthar gel was resumed. At this time the patient was placed on a diet consisting of rice, tapioca, lamb, sweet potato, carrots, squash, artichokes, beets, salt and sugar. Histamine desensitization was started by the hypodermic method according to the plan of Horton. After two weeks it was possible to discontinue Acthar gel. Bacon, beef, and white potato were added to the diet, and urticaria and angioneurotic edema recurred within 24 hours. Subsequently these foods were removed from the diet, with complete disappearance of all symptoms.

Comment: Urticaria, not previously present, occurred when cortisone was given. Severe urticaria and angioneurotic edema were controlled by intermittent use of corticotropin, given intramuscularly, and milder urticaria by Acthar gel. Only through elimination of offending foods, however, was eventual control of symptoms achieved without these steroids.

Case 4: A woman 26 years of age was first observed in April, 1951, because of dermatitis of the hands and forearms. It had first occurred in March, 1950, had disappeared in September, 1950, then recurred in March, 1951. Relief was obtained at an altitude of 6,000 feet in the Sierra Nevada Mountains.

In skin testing by the scratch and intradermal methods no significant reactions were observed. Because of the history of seasonal onset and the fact that relief was obtained at an altitude of 6,000 feet, desensitization therapy with a multiple pollen antigen containing important spring and summer pollens in the patient's area of residence was instituted. Overdosage of antigen produced definite increase in symptoms. In spite of desensitization over a period of four months, a severe exacerbation of dermatitis, necessitating hospitalization, occurred in August, 1951. Cortisone therapy was started with initial doses of 75 mg. orally every eight hours. Within 36 hours there was dramatic reduction in erythema, edema, and pruritus, and complete cessation of "weeping." The patient was discharged from the hospital after ten days, during which time the dosage of cortisone had been reduced to 25 mg. every eight hours, which controlled the eruption satisfactorily. Cortisone was gradually discontinued during the next month.

During the height of the fall pollen season, in late October and November of 1951, there was moderate dermatitis on the hands and forearms. Cortisone was applied locally (5 mg. per gram of Neobase®) twice daily, with satisfactory control of symptoms. Desensitization therapy was continued.

Comment: Cortisone given by mouth, and later local cortisone therapy, were highly effective in controlling severe exacerbation of dermatitis of the hands and forearms caused by allergic reaction to pollens.

Case 5: The patient, a 30-year-old man, six months before he was observed by the authors had had a papulovesicular eruption, with weeping, involving the face and anterior neck, which continued over a three-month period. Two dermatologists on separate occasions prescribed cortisone by mouth, and each time the eruption disappeared within seven to ten days but recurred promptly when cortisone therapy was discontinued.

Perennial nasal blocking with moderate postnasal discharge had been present for two years and these conditions were exacerbated whenever the patient drank milk.

Skin testing by the scratch method was carried out and a large reaction to house dust was noted.

Because of the persistence of dermatitis through the summer, fall, and early winter months, food sensitivity was suspected, and the authors' standardized cereal-free elimination diet was prescribed. After the patient had followed the diet for two days, without adjunctive therapy, there was pronounced decrease in itching, erythema and oozing. In ten days the eruption was practically absent and there was no pruritus. There was no recurrence at the time of last report, several months later.

Comment: Allergic dermatitis was controlled on two occasions by cortisone given orally. However, lasting control was not effected until allergenic foods were eliminated from the diet.

CASE 6: The patient, a man 48 years of age, had had severe, intractable, perennial bronchial asthma for seven years. Intensive therapy, including dietary and environmental control, desensitization, autohemotherapy, intravenous administration of Pyromen,® use of typhoid vaccine, antibiotics, and many other measures, had given no relief. The severity of symptoms prevented gainful employment and produced almost complete invalidism. In August, 1950, cortisone therapy was instituted. The initial dose was 100 mg. every eight hours intramuscularly, with gradual reduction over a ten-day period to 25 mg. every 12 hours. After one month oral administration was started, and throughout the ensuing 18 months, with the exception of a short period when corticotropin was used, the patient took 25 to 50 mg. of cortisone daily.

Prompt and dramatic improvement of asthma was noted within 24 hours after cortisone therapy was started. Cessation of therapy on three separate occasions resulted in recurrence of severe asthma within 24 to 36 hours.

Corticotropin was substituted for cortisone for a three-week period with equally good symptomatic benefit. Because of the ease of administration, however, the patient preferred cortisone. At the time of last report the patient had been taking cortisone for 18 months. He returned to full-time employment and was entirely comfortable. The blood pressure and the sugar content of the blood, repeatedly determined, remained normal. At no time was edema noted.

Comment: Cortisone and corticotropin were the only effective therapeutic agents in a case of severe, intractable perennial bronchial asthma. Continuous treatment was necessary. No complications arose in a period of 18 months.

CASE 7: A woman 33 years of age, known to be sensitive to poison oak since early childhood, was exposed to it in April, 1950, and a severe, oozing, erythematous eruption developed, with edema, fever and malaise. The condition persisted for one week and necessitated hospitalization. In November, 1950, after additional exposure to poison oak, a similar eruption and pronounced systemic disturbance occurred. In January, 1951, poison oak was by mischance burned in the fireplace of the patient's home and severe symptoms recurred.

Twenty-four hours after the development of symptoms, cortisone was given by mouth in doses of 50 mg. every six hours for six doses, then 50 mg. every eight hours for three doses, 50 mg. every 12 hours for four doses, and 25 mg. every 12 hours for four doses. Within 24 hours there was pronounced decrease in edema, itching, and malaise, and within eight days there was little or no evidence of abnormality of the skin except for residual pigmentation.

Comment: Cortisone was highly effective in relieving symptoms of poison oak dermatitis.

CASE 8: A woman 22 years of age first noted moderate bronchial asthma in March of 1946. In the next three months there were varying intervals of relief, but thereafter there were only occasional periods without wheezing. In addition severe attacks occurred at irregular intervals without regard to season. Hospitalization was necessary on three occasions prior to May, 1950, when the patient was first observed by the authors.

Scratch tests had been performed by another physician and a diet excluding foods to which the patient was sensitive had been prescribed without benefit.

Upon physical examination evidence of allergic rhinitis and bronchial asthma was noted. There were no abnormalities in an x-ray film of the chest, in urinalysis, or in the examination of the blood. Result of a Kline test was negative for syphilis.

In skin testing by the scratch method 1-plus reactions to a number of environmental allergens and house dust, as well as to several foods, were noted.

Treatment consisted of institution of the cereal-free elimination diet (Nos. 1, 2, and 3), establishment of a strict dust-free environment in the bedroom, and the use of potassium iodide, aminophylline by mouth and 1:100 epinephrine solution by nebulizer for symptomatic relief. For the next two months symptoms were well controlled. Then a lapse in dietary discipline produced a moderately severe paroxysm of asthma, which was slowly brought under control over a two-week period by reinstitution of the measures previously employed. In August, 1950, following another dietary lapse, moderate asthma again recurred and lasted for three or four days. During the remainder of 1950, with strict adherence to the elimination diet, asthma was well controlled. Following a prolonged and wide departure from the prescribed diet, the patient was brought into the office in February, 1951, in a moribund condition. The blood pressure was unobtainable and the pulse was thready and barely perceptible. The patient was deeply cyanotic, sweating and severely dehydrated. Immediately, epinephrine was injected hypodermically and 100 mg. of cortisone was given intramuscularly. Parenteral administration of glucose in saline solution was started and the patient was moved to a hospital within three hours. Parenteral administration of cortisone was continued in doses of 100 mg. every four hours for two doses, after which there was definite improvement, and the frequency of injections was reduced to 100 mg. every six hours. On the second hospital day the patient was free of severe asthma and in a satisfactory condition. Cortisone then was given by mouth, 75 mg. every eight hours. During the next four days the amount of cortisone given was gradually reduced to 50 mg. every 12 hours. The patient was discharged from the hospital and during the next week the dose was further gradually reduced to 25 mg. daily, then discontinued.

Thereafter, save for a mild recurrence for two days after brief departure from dietary discipline, the asthma was well controlled.

Comment: It is felt that the administration of cortisone was probably life-saving. The shortness of the period of hospitalization is noteworthy.

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Primary Neoplasms of the Adrenal Gland

Diagnosis and Surgical Management

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• Tumors of the adrenal glands produce hormones which cause a variety of symptoms and signs including high blood pressure, excessive growth of hair on the body and precocious sexual development. By recently developed tests, it has been possible to differentiate high blood pressure due to these tumors from hypertension due to other causes. Removal of these tumors will often alleviate changes caused by them.

Localization of the tumor and appraisal of the condition of the contralateral gland should be carried out preoperatively if possible. In this, several kinds of roentgen studies are helpful. Infusions of drugs during operation can be used to control the blood pressure which otherwise would vary widely.

During a ten-year period (1942 to 1951) there were observed at the Los Angeles County General Hospital 100 proved cases of non-secreting and secreting primary neoplasms of the adrenal glands. In addition, there were three cases of Cushing's syndrome due to bilateral adrenal cortical hyperplasia, and ten probable cases (four, pheochromocytomas; five, Cushing's syndrome; one, adrenogenital syndrome) in which operation was not done.

It is probable that until a relatively short time ago a considerable number of deaths ascribed to other causes, particularly hypertension, were actually caused by undetected and unsuspected primary neoplasms of the adrenal glands. It is now recognized, of course, that paroxysmal or sustained hypertension may be a manifestation of the presence of such lesions. The introduction of hormonal studies and of adrenolytic and other pharmacologic agents has made the diagnosis of these neoplasms easier, and preoperative differentiation of adrenal cortical hyperplasia from adrenal cortical neoplasia has become more accurate.

This presentation deals with diagnostic and surgical problems relative to the management of patients with adrenal neoplasms.

NEOPLASMS OF THE ADRENAL CORTEX

Neoplasms of the adrenal cortex are of two types, non-secreting and secreting. Non-secreting neoplasms may be either adenomas or carcinomas. Adenomas are usually discovered accidentally at operation or during postmortem examination. They are yellowish tumors which lie in the adrenal cortex and vary in size from a few millimeters to several centimeters. They may be unilateral or bilateral. Non-secreting adrenal cortical carcinoma manifests itself either as an abdominal mass causing pressure symptoms or by the appearance of metastases.

Secreting neoplasms of the adrenal cortex may be adenomas or carcinomas. The symptoms produced by them depend upon which hormones are secreted. If the cells composing the tumor arise from the reticular zone, the hormones are mainly androgenic or less frequently estrogenic, and the adrenogenital syndrome will be produced. If the cells arise mainly from the zona glomerulosa or zona fasciculata, the hormones will be mainly those which affect carbohydrate, protein and fat metabolism (compounds E, F, B, and A) and salt and water metabolism (desoxycorticosterone). Neoplasms composed of such cells will cause Cushing's syndrome. Very often, however, androgenic hormones are secreted in excess in patients with Cushing's syndrome, so that manifestations of Cushing's syndrome are frequently combined with those of the adrenogenital syndrome in the same patient.

Adrenogenital Syndromes

The adrenogenital syndromes fall into two groups, corticoandrogenic and corticoestrogenic. The corticoandrogenic syndrome is much the more frequent. In male children, excessive secretion of androgenic hormones brings about enlargement of the genital organs, precocious muscular development, precocious puberty, and accelerated ossification (adrenal dwarfism). In adult males it causes exaggerated evidences of masculinity. The effect in females may be pseudohermaphroditism, masculinization, or virilism manifest in an overgrowth of hair on the face and on the body generally, acne, decrease or absence of menses, and masculine vocal timbre. In some patients the Achard-Thier syndrome (diabetes mellitus of bearded women) may be present.

The excessive secretion of estrogen and progeste-

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rone may cause pseudohermaphroditism in male infants, and girlishness in older boys. In adult males the corticoestrogenic syndrome, usually caused by a secreting adenocarcinoma of the adrenal cortex, consists of gynecomastia, atrophy of the testicles and loss of potency. In most cases an abdominal mass is present at the site of the affected adrenal gland. The corticoestrogenic syndrome in girls consists of macrogenitosomia and precocious puberty. In adult females there is exaggerated evidence of femininity.

Cushing's Syndrome

The term *Cushing's disease* describes a condition in which basophilic adenoma of the pituitary gland is demonstrable and associated with it are obesity, moon face, purple striae, amenorrhea, hypertension, osteoporosis and diabetes mellitus. In *Cushing's syndrome*, basophilic adenoma of the pituitary gland is not demonstrable although there are usually hyalinized, vacuolated basophilic cells in the anterior lobe (Crooke cells). In 75 to 78 per cent of patients with Cushing's syndrome, bilateral hyperplasia of the adrenal glands occurs. In 22 to 25 per cent there are unilateral or bilateral adrenal cortical adenomas. Rarely, Cushing's syndrome is due to a secreting carcinoma of one adrenal cortex.

The symptoms of this syndrome include hypertension, plethoric painful adiposity of the face, neck, and trunk (buffalo type), scaly, easily bruised skin, purple striae on the abdomen, thighs and flanks, amenorrhea, hirsutism (in females), muscular weakness, polyphagia, polydipsia, polyuria, osteoporosis of the spine, skull and pelvis, glycosuria, or diabetes mellitus and mild polycythemia. Associated with the condition are an increase in content of sugar in the blood, a tendency to hypochloremic alkalosis, fewer than 40 eosinophils per cu. mm. of blood obtained when the patient is fasting, and often an increase in excretion of 17-ketosteroids and 11-oxysteroids in the urine. The patients are usually women below the age of 40 years. Not infrequently the symptoms start before the age of 20. Cushing's syndrome must be differentiated from essential hypertension, pituitary basophilism, arrhenoblastoma of the ovary, adrenogenital syndrome, hyperostosis frontalis interna (Morgagni syndrome), malignant neoplasm of the thymus gland, and pineal tumor.

NEOPLASMS OF THE ADRENAL MEDULLA

The non-secreting adrenal medullary neoplasms are sympathogonioma, neuroblastoma, neurofibroma, ganglioneuroma and angiomyelolipoma; the secreting are pheochromocytoma and paraganglioma. Nonsecreting neoplasms produce symptoms because of local growth or metastasis. Sympathogoniomas appear during intra-uterine life or early infancy and metastasize rapidly to the liver, lymph nodes and bones. Neuroblastomas usually occur in childhood and either metastasize rapidly to the liver, producing hepatomegaly (Pepper type) or to the skull and other bones, causing unilateral or bilateral exophthalmos and increased intracranial pressure (Hutchinson type). Ganglioneuromas are rare, usually occur in adults and are generally benign and small in size. They do not cause symptoms and most often are found accidentally at postmortem examination. Angiomyelolipomas form a unilateral abdominal mass which presses on and displaces neighboring organs.

Secreting neoplasms of the adrenal medulla produce constitutional symptoms because they secrete epinephrine and norepinephrine. In some of these tumors the epinephrine content may range from 3 per cent to 86 per cent, and in others the content of norepinephrine may predominate (up to 97 per cent). The right adrenal gland is a little more frequently involved, and in approximately 10 per cent of patients pheochromocytomas are bilateral. In a small number of cases the pheochromocytoma may be malignant and metastasize. Usually, metastases from a malignant pheochromocytoma are non-secretory, whereas the primary lesion may function.

Pheochromocytomas cause paroxysmal attacks of hypertension accompanied by profuse sweating, headache, palpitation, vomiting, dyspnea, pallor or cyanosis, dizziness, and weakness. These attacks may be precipitated by exercise, changes of posture, emotions and eating. The hypertension is paroxysmal in 82 per cent of patients and continuous in 18 per cent. In approximately 50 per cent of the patients there is a palpable abdominal mass. Hyperglycemia occurs in about 61 per cent and an increased metabolic rate in 50 per cent of patients with pheochromocytoma. This disease must be differentiated from paroxysmal hypertension due to such conditions as brain tumors, epilepsy, tabes dorsalis, lead poisoning and toxemia of pregnancy. It must be distinguished from hyperinsulinism, thyrotoxicosis and, especially, essential hypertension. Hypertension in children should suggest the possibility of pheochromocytoma.

The diagnosis of pheochromocytoma is aided by certain pharmacologic tests. Benzodioxane,* administered intravenously in a dose of 16 to 20 mg., will cause a fall of blood pressure within three minutes when there is a pheochromocytoma, whereas it will tend to raise the blood pressure in essential hypertension. Dibenamine,® administered intravenously in a dose of 400 mg. to a patient with pheochromocytoma causes a gradual decrease in blood pressure over a period of three to four hours. Tetraethylammonium chloride or bromide, when given by vein in a dose of 400 mg., elevates the blood pressure within two minutes in a patient with this disease, and giving benzodioxane then causes the pressure to decrease sharply. When histamine is administered in a dose of 0.025 mg. by vein, the blood pressure first decreases, then rises above the initial level. Finally, Mecholyl,® administered subcutaneously in a dose of 20 mg., will cause a rapid fall in blood pressure followed by a gradual rise to or above the initial level within 20 minutes.

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*Saline solution of Benodaine® hydrochloride, a brand of piperoxane hydrochloride.

It is generally agreed that the drug tests mentioned can have both false-negative and false-positive results. Moreover, serious reactions such as excessive hypertension, acute pulmonary edema, anuria, and severe hypotension[1] have occurred following the use of histamine, benzodioxane, Dibenamine and tetraethylammonium bromide. In a series of 59 patients with pheochromocytoma,[3] 56 had a positive reaction to the benzodioxane test, and 3 had false-negative response attributed to an absence of circulating epinephrine or norepinephrine at the time the tests were done.[3] There is evidence that some "secondary" mechanism develops in patients with pheochromocytoma which can sustain the hypertension even when there is no circulating epinephrine or norepinephrine.

PRESENT SERIES OF CASES

The present series consists of the cases of patients who were observed in the Los Angeles County General Hospital or were presented to the Los Angeles County Hospital Tumor Board from 1942 to 1951.

There were 90 cases of non-secreting neoplasms of the adrenal cortex—adenoma in 85 cases, carcinoma in 3, and angiomyelolipomas in 2. In most cases the cortical adenomas were small and were discovered accidentally at autopsy, although there were several cases in which they were large enough to be palpable as an abdominal mass. In one instance myxomatous degeneration of a large adrenal cortical adenoma had produced a large cyst which could be palpated through the abdominal wall. In both of the cases of angiomyelolipoma the tumors were large. The tumors were unilateral in two of the three cases of carcinoma and bilateral in the other.

Four patients had secreting cortical neoplasms—adenoma in two cases and carcinoma in two—and all four had the adrenogenital syndrome of androgenic type. In one case of adenoma, the tumor was ectopic in the ovary. There was an additional patient with the adrenogenital syndrome in whom surgical exploration was not carried out. Cushing's syndrome was present in eight patients. In three of them bilateral adrenal cortical hyperplasia was observed at operation; the other five were not operated upon.

There were three cases of non-secreting adrenal medullary tumors—neuroblastomas in all instances.

As to cases of secreting medullary neoplasms, three patients had definitely proved pheochromocytomas. In one case the growth was malignant, in another bilateral, and in the third extrarenal in position. There were, in addition, four patients with symptoms strongly suggesting pheochromocytoma, but in whom the diagnosis was not confirmed either by surgical operation or postmortem examination.

ROENTGENOLOGIC DIAGNOSIS

In cases in which adrenal neoplasm is suspected, five roentgenologic diagnostic procedures should be carried out: (1) A plain film of the abdomen may reveal the presence of a large tumor shadow or calcification in an adrenal neoplasm. (2) Bilateral pyelograms, either intravenous or retrograde, may disclose downward displacement of the kidney, if a neoplasm is present, or flattening of the upper pole of the kidney. The pyelogram is believed to have diagnostic accuracy of approximately 55 per cent. (3) Perirenal insufflation of air may outline the tumor. In skilled hands this method has a high degree of accuracy. (4) An x-ray film of the chest should be made in all cases in which pheochromocytoma is suspected, for in rare instances pheochromocytoma may arise within the chest. In addition, in patients with Cushing's syndrome it is important to determine whether the symptoms may be caused by a malignant neoplasm of the thymus gland. (5) Roentgen studies of the skull, pelvis and long bones should be carried out if a patient is suspected of having Cushing's syndrome. The following signs should be looked for: enlargement of the sella turcica, which may accompany a basophilic adenoma of the pituitary gland; hyperostosis frontalis interna, which is present in the Morgagni syndrome; osteoporosis, which occurs in Cushing's syndrome.

SURGICAL MANAGEMENT OF ADRENAL NEOPLASMS

The prognosis of patients with the adrenogenital syndrome is good since this syndrome is compatible with a normal length of life, provided it is not caused by an adrenal cortical carcinoma and is not associated with Cushing's syndrome. Atrophy does not occur in the unaffected adrenal gland. For this reason adrenal insufficiency is not likely after removal of a unilateral adrenal tumor, and the operative mortality is relatively low. Patients with Cushing's syndrome, on the other hand, have a poor prognosis and, if not treated, usually die of cerebral vascular accident, heart failure, coronary thrombosis, septicemia or pneumonia within five to seven years.

If the syndrome is due to an adrenal cortical carcinoma, the duration of life is, of course, even shorter. Usually when a functioning neoplasm is present in one adrenal gland, atrophy takes place in the other. Shock may develop swiftly during surgical operation as soon as the adrenal cortical tumor is removed. The extremely sudden onset of shock suggests that two factors may be responsible: a neurogenic factor and the factor of acute adrenal cortical insufficiency.[2]

In every case in which adrenal cortical tumor is suspected, it is necessary, first, to make sure the symptoms are not caused by bilateral cortical hyperplasia, and then, if a tumor is present, to determine which side it is on. As this cannot always be done before operation, it is usually necessary to plan an operative approach to permit examination of both adrenal glands. An upper transverse abdominal incision may be used both to explore the adrenal glands and, if feasible, to remove an adrenal cortical tumor. If the patient is very obese, transperitoneal removal of an adrenal cortical tumor may be difficult; and it may be advisable in such circumstances to close the exploratory incision and to remove the tumor through a posterior extraperitoneal incision two or three weeks later. Preoperative hormonal preparation is necessary, especially for patients with Cushing's syndrome. For 48 hours before operation, 100 mg. of corticotropin (ACTH) is given daily in four divided doses. The same schedule is continued for several days during the postoperative period and then use of the hormone is gradually discontinued. The object of this is to stimulate the contralateral atrophic adrenal gland. Cortisone is given in a dosage of 100 mg. daily before, and for several days after, operation. It is necessary while these hormones are being administered to watch for evidences of exacerbation of diabetes mellitus, if present, of excessive retention of fluids, and of excessive loss of potassium from the body. If blood pressure suddenly decreases during operation, blood transfusions, norepinephrine and adrenal cortical extract should be administered. Usually in cases in which shock develops following removal of an adrenal cortical tumor there is atrophy of the opposite adrenal gland, and occasionally hemorrhage. Rarely it is absent.

The mortality rate associated with removal of adrenal cortical tumors ranges from 30 to 50 per cent. The postoperative results are most gratifying when a benign unilateral adrenal cortical tumor is removed. The results of surgical treatment of bilateral cortical hyperplasia are less satisfactory. Bilateral adrenalectomy in two stages may be necessary. The end results in patients with adrenal cortical carcinoma are, of course, poor because of recurrence of the neoplasm.

There are certain peculiar problems associated with the surgical treatment of pheochromocytoma. In this condition the opposite adrenal gland does not undergo atrophy. The danger during operation, therefore, does not arise from acute adrenal insufficiency but from the sudden flooding of the circulation with large quantities of epinephrine and norepinephrine. This causes shock due to acute left ventricular failure. Therefore patients with pheochromocytoma should not be given either spinal or cyclopropane anesthesia. The anesthetic of choice is ether and oxygen with or without sodium Pentothal® induction. The surgical approach may be transperitoneal through an upper transverse abdominal incision which will permit examination of both adrenal glands and of the paraganglia chains. If the pheochromocytoma can be definitely localized to one side, it may be removed through a lumbar extraperitoneal incision. The transthoracic incision, which is employed by some surgeons, adds the hazard of a pneumothorax to the procedure.

Adequate amounts of blood, plasma, glucose and saline infusions should be available. Two solutions for intravenous infusion should be on hand at the beginning of the operation. One should contain Arterenol® (4 mg. per 1,000 cc. of 5 per cent glucose solution) or Neosynephrin® (20 mg. per 1,000 cc. of 5 per cent glucose solution) which should be given at a rate sufficient to maintain moderate hypertension throughout the operation. When the blood pressure falls, as it always does when the pheochromocytoma is removed, the rate of infusion should be increased. The other should contain benzodioxane in a dosage of 10 mg. in 1 cc. of 1 to 2 per cent sodium chloride solution. This should be administered during the hypertensive reaction that occurs while the pheochromocytoma is being manipulated preparatory to removal. It may be necessary to repeat this dose of benzodioxane several times during the hypertensive reaction in order to lower the blood pressure. Aqueous adrenal cortical extract should be given during operation in divided doses to a total of 50 cc., and after operation in divided doses to the same total.

The operative mortality is approximately 25 per cent and is due to shock during or within a few hours after operation, to postoperative hyperpyrexia, to bronchopneumonia, or to the presence of additional unsuspected pheochromocytomas either in the opposite adrenal gland or in the paraganglia chains.

2007 Wilshire Boulevard.

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Gastroduodenostomy After Gastric Resection

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• *Gastroduodenostomy after gastric resection is a procedure which can be readily performed if the short gastric vessels are first divided. It makes for a more physiological restoration of the gastrointestinal tract than is accomplished with gastrojejunostomy and permits proper admixture of the food with the bile and pancreatic enzymes. It avoids several potential dangers such as leakage from the duodenal stump, the possibility of a gastrocolic fistula, and malfunction of the anastomosis due to distortion of a jejunal loop. Apparently the "dumping syndrome" does not occur after gastroduodenostomy as it sometimes does after gastrojejunostomy.*

ANASTOMOSIS of the duodenum to the gastric stump, a procedure originated by Bilroth and fully described in the literature, has been employed by the authors for three basic reasons: It restores physiologic continuity of the gastrointestinal tract; it eliminates one step, closure of the duodenal stump; and it eliminates two potential hazards, leakage from the duodenal stump and the possibility of a gastrocolic fistula.

The results have been gratifying. There have been no postoperative deaths, only one serious postoperative complication (hemorrhage from the suture line), and no complications such as anastomotic ulcers, stenosis of the suture line, or the so-called "dumping syndrome."

MATERIAL

Gastroduodenostomy was carried out in 33 patients (6 women and 27 men) between the ages of 22 and 76 in the period of three years. Twenty-five of the patients had duodenal ulcers, six had gastric ulcers and two had gastric carcinomas. The patients with ulcers had the usual indications for operation—massive hemorrhage, pyloric obstruction, or intractability.

OPERATIVE TECHNIQUE

Following is a description of the operative technique used by the authors:

The gastrocolic omentum is divided and the pylorus and first portion of the duodenum freed to below the level of the ulcer. The gastrohepatic omentum is opened, the right gastric vessels divided and ligated, and the superior border of the pylorus and duodenum freed. A clamp is placed across the duodenum below the ulcer and the duodenum divided distal to the clamp so that the distal end of the duodenum is not crushed. To prevent spillage, the stump is temporarily closed with several Babcock clamps. The left gastric artery is identified near the entrance of the esophagus into the stomach and divided and tied. All the vessels along the greater curvature, including the short gastric vessels between the stomach and spleen, are then divided. It is imperative that this last step be done, for otherwise the stump of the stomach will remain high under the costal margin and cannot be brought down to meet the duodenal stump.

After division of the short gastric vessels, the stomach will drop into the operative field and literally hang from the esophagus. Despite this apparently massive ligation of the arterial supply of the stomach, it has always been noted that the color of the upper one-fourth remains good, and that if any of the submucosal vessels are cut there is an abundant flow of blood. A Payr clamp is placed across the stomach so that all of the lesser curvature and most of the greater curvature lies distal to it. In other words, between 75 and 80 per cent of the stomach will be amputated, leaving only the cardia.

Incision is then made through the serosa and muscularis on the proximal side of the clamp, the submucosal vessels exposed and individually suture-ligated with No. 80 cotton to prevent postoperative hemorrhage. Beginning at the lesser curvature, the stomach is cut across for about a third of its distance and that portion of the stump of the stomach is inverted with a single layer of No. 60 cotton interrupted sutures of inverting type. Division of the stomach is continued along with closure of the stump until the residual opening approximates in size the opening in the duodenum. The duodenum is anastomosed to the stump of the stomach with a single layer of No. 60 cotton interrupted sutures of inverting type. Extra sutures are placed at each of the critical points—the two corners and the points at which the two suture lines join.

Postoperatively, a Levine tube is left in the gastric stump for 24 hours and then removed. The patient

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is permitted to take 2 ounces of fluid every half hour, as tolerated. At this time the patient is carefully instructed to take liquids slowly and not to take any if he feels the least fullness or discomfort. The oral intake of food is increased rapidly by the addition of cereals, soft boiled eggs, pureed vegetables, custards, and the like, until at the end of about five days the diet is that usually prescribed for an ambulatory patient with gastric ulcers. During the first week, feedings are at two-hour intervals. After the first week they are changed to six times a day. Throughout this entire stage, it is constantly emphasized to the patient that he must eat slowly and must stop eating if he has even a slight feeling of fullness or discomfort. This is very important, for with this kind of anastomosis vomiting occurs if the gastric stump becomes even a little distended. The diet commonly used for ambulatory patients with gastric ulcer is maintained for approximately four weeks, after which patients are permitted to eat any foods which agree with them and to eat according to any schedule that will maintain their weight.

RESULTS

There were no postoperative deaths. One patient had bleeding of serious proportions from the suture line, which was readily controlled by Gelfoam® powder and Thromboplastin.® There were no other major postoperative complications, and there were no cases of postoperative gastric retention or dilation. The late postoperative course of the patients was exceedingly satisfactory. The only difficulty encountered was a tendency on the part of a few to vomit after meals. In each instance this was owing to violation of instructions to eat slowly and to take at least 30 minutes for each meal.

In postoperative x-ray studies, a small gastric pouch, indicative of an adequate resection, was observed in all cases. The duodenum did not become distended upon ingestion of barium, and the gastric pouch did not empty too rapidly.

DISCUSSION

In any operative procedure on the gastrointestinal tract, the goal, in addition to restoring continuity, should be to restore, as nearly as possible, a physiologic state. This, it is believed, is more closely approached with gastroduodenostomy after gastric resection than with gastrojejunostomy. After gastroduodenostomy, food passes from the stomach into the duodenum, stimulating the flow of bile and pancreatic juices, and thus permits the food to mix directly with these enzymes as it passes on into the jejunum; whereas after gastrojejunostomy the food is dumped directly into the jejunum, and mixture with the bile and pancreatic enzymes takes place during its passage through the jejunum. Digestion and absorption of digested food should be more efficient in the patient with gastroduodenostomy. This was seemingly borne out by the fact that, in the patients in the present series, maintenance of weight and weight gain were no problem at any time.

In a comparison of x-ray studies made on patients with gastroduodenostomies and on patients with gastrojejunostomies, a somewhat slower emptying of the gastric pouch after gastroduodenostomy was noted. Another feature was that there was no distention of the duodenum at any time after gastroduodenostomy. The "dumping syndrome" was not noted in any of the patients in the present series, probably owing to the delay in emptying through the duodenal anastomosis, but there was a tendency for patients to regurgitate food if they ate too fast. The authors look upon regurgitation when the stomach is overdistended as protection of the patient against the dumping syndrome.

Gastroduodenostomy also eliminates several potential difficulties, such as the obstructive problems which occasionally arise after gastrojejunostomy from a twisted or distorted loop of jejunum, and the possibility of a gastrocolic fistula due to the development of an anastomotic ulcer. In gastroduodenostomy, the suture line is at a distance from the colon and, should an anastomotic ulcer develop, the likelihood of adherence to the colon with development of a fistula is remote. From a technical standpoint the procedure has several advantages—it eliminates one step, the closure of the duodenal stump—and with that a potential danger, leakage from the duodenal stump. The only technical problem added by the procedure is one of division of the short gastric vessels which sometimes can be difficult because of their location, high under the costal arch. It is appreciated that gastroduodenostomy is not possible in all cases after gastric resection, but the authors believe it can be done in most cases and should be used more often.

1177 Montgomery Drive.

Urethral Stenosis in Young Girls

A Cause of Recurrent Infection of the Urinary Tract

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• *Recurrent urinary tract infection in young girls may result from unsuspected urethral stenosis.*

The diagnosis should be considered in the presence of symptoms suggesting obstruction of the lower urinary tract—symptoms such as infrequent voiding and straining on urination, particularly in intervals between bouts of acute febrile illness accompanied by pyuria or bacilluria. If radiopaque medium is retained in the bladder in unusual quantity following voiding at the close of excretory urography, it is suggestive but not pathognomonic of urethral stenosis. The diagnosis is established by instrumental calibration of the urethra under general anesthesia.

Treatment consists in removing the cause by urethral dilatation and administering antibiotics and chemotherapeutic agents to overcome the infection.

The distressing problem of recurrent infection of the urinary tract in young girls is frequently encountered by general practitioners, pediatricians and urologists. The condition is most disturbing to parents forced to cope with recurrent and unpredictable severe febrile illness, and the patients, in addition to the physical effects of recurring acute infection, may suffer emotionally and may be retarded in their development. Too often an anxious parent sequesters a child so affected, treating her as a semi-invalid unable to enjoy fully the experience of growing up.

The authors believe that urethral stricture deserves emphasis as a cause of recurrent urinary infection in young girls. All physicians are familiar with stricture of the urethra in adult males with the attendant sequelae of urinary tract obstruction, stasis and infection, even to the point of decompensation of the ureterovesical valve mechanism, of which the end result may be dilatation and stasis of the upper urinary tract with ultimate renal failure.[4] The same situation may occur in male infants and may result from stenosis of the preputial meatus, the urethral meatus, the urethra or valves of the posterior urethra or from congenital contracture of the vesical neck.[3] Although urinary tract infection occurs less frequently in young boys than in girls, the presence of an obstructive lesion as a cause is more likely to be recognized early in boys simply because the known higher incidence of such lesions in males often leads to urologic investigation without delay.

Urethral stenosis in girls is by no means a new or heretofore unrecognized entity. Campbell[1] reported a series of 152 cases which he had observed of urethral stricture in children varying in age from 7 weeks to 16 years, 26 of which were in girls. Two of the girls, aged 13 and 30 months, were examined because of so-called "chronic pyelitis." Each was found to have tight congenital stenosis of the external urinary meatus with trabeculation and sacculation of the urinary bladder. The bladder of each, Campbell noted, had the same appearance as that seen in long-standing chronic prostatic obstruction in elderly males. In another girl of 3 years he found by cystographic evidence that dilatation of the upper urinary tract had resulted from stenosis of the urethral meatus.

It is reasonable to assume that most infections of the urinary tract in young girls originate in the lower tract. In infants they probably originate as "diaper infections." If there is no mechanical obstruction of the lower tract, infection of this type is transient; and even before the advent of chemotherapeutic and antibiotic agents, the simple expedient of copious fluid intake ultimately was curative.

During the past few years the authors have observed several young girls with urinary infections, most of whom were brought to a physician because of recurrent acute illness of sudden onset, and in most cases without symptoms directly referable to the urinary tract during the febrile periods. The majority of them had pyuria and bacteruria, varying in degree from case to case. In each was found subjective and objective evidence that the urethra was abnormally

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small. None of these children, however, had evidence of severe obstructive changes in any of the urinary organs. In several the nature of the repeated febrile illnesses had not been determined in earlier occurrences simply because the urine had not been carefully examined.

The following cases have been selected as illustrative of the clinical manifestations:

CASE REPORTS

CASE 1: A 4½-year-old girl had had recurring fever, 104° to 106° F., since the age of 9 months, associated regularly with vomiting and on one occasion with generalized convulsions. These febrile periods recurred regularly in approximately four-month cycles and lasted about a week. From the age of about 2½ years the child had voided very infrequently, never more often than twice in 24 hours and always in large quantity, although there was no difficulty in starting the stream. She had always been frail and relatively inactive, had frequent colds, and, it was reported, had had bronchopneumonia three or four times. She was small and slender; her height and weight were approximately two standard deviations below the mean for her age. No other abnormalities were noted on physical examination. The only abnormalities observed in laboratry studies were the following: In a stained smear of a urine specimen obtained by catheter many pus cells, some clumped, with many granular and cellular casts and Gram-negative rods, were seen; Proteus vulgaris grew on a culture of the urine. Minimal blunting of the minor calyces of the right kidney was observed in an excretory urogram, and some residual urine was noted in the bladder in a film made after voiding.

With the patient under general anesthesia the urethra barely permitted passage of a size 14 (French) sound. On cystoscopy early trabeculation of the bladder with elevation of the interureteric ridge and injection of the trigone was noted, but no abnormalities were found in the upper tract. The urethra was dilated with some difficulty to size 18 (French). The urinary infection was thereafter treated with sulfacetimide.

After the dilatation procedure the urine remained clear and for the first two months the patient voided easily, about five times daily. Three months after dilatation, although feeling well, she was voiding only three times daily and complained of slight dysuria. She was again hospitalized and the urethra was dilated to size 20 (French). Urine drawn by catheter was still clear. Six months after the original dilatation the patient remained afebrile and symptom-free.

CASE 2: An 11-year-old girl had urinary frequency and incontinence of pronounced degree for two days. She gave a history of incontinence on laughing or during active play from infancy. She voided only at long intervals and seemed unable to void unless the bladder was quite full. No abnormalities were observed on physical examination. On urinalysis proteinuria of more than 0.1 gm. per 100 cc. was noted and many erythrocytes, pus cells, round epithelial cells and motile rods were seen. Cultures of urine from the bladder contained E. coli. No abnormality was observed in excretory urograms. On cystoscopy the urethral meatus was found to be narrow, red and edematous. There were moderate trigonitis and cystitis. In excretory urograms the upper urinary tract appeared normal. The urethra was dilated to size 24 (French) and a mixture of terramycin and chloramphenicol was given for one week. Thereafter for eight months, during which she was observed occasionally, the patient had no incontinence or other symptoms. No abnormalities were noted in examination of the urine and no organisms grew on cultures.

CASE 3: A 3½-year-old girl had repeated bouts of high fever, lethargy and pyuria for one year. No cause had been found on physical examination on these occasions, but the condition had responded satisfactorily to sulfonamide therapy. There had also been many intercurrent episodes of infection of the respiratory tract and of adenotonsillitis and otitis media. The urinary symptoms frequently followed respiratory tract disease. The urine sediment was usually found to contain many pus cells with clumps of leukocytes and a few granular casts. Aerobacter aerogenes grew on a culture of urine. No abnormalities were noted in excretory urograms. With the patient under general anesthesia, a cystoscope, size 16 (French), was introduced with some difficulty owing to urethral stenosis. The interureteric ridge was somewhat elevated and the trigone and urethra were diffusely reddened. The upper tract was normal. In nine months of observation thereafter the patient was well except for two bouts of fever and pyuria, one associated with vulvovaginitis due to Enterobius vermicularis and the other with adenotonsillitis.

CASE 4: The patient's mother noted that her daughter, aged 3½ months, had to push and strain a good deal to void. On examination of the urine a slight increase in pus cells was noted and there were some motile rods in the urinary sediment. The symptoms subsided spontaneously in three to four days and did not recur for more than a year, but the patient ate little and grew slowly. At the age of 20 months she had been voiding infrequently for two to three weeks, and then only with what seemed to be a painful effort in starting the stream. The small size of the urethral meatus was the only abnormality observed on physical examination at that time. The patient was hospitalized and, in a specimen of urine obtained by catheter, pus cells, a few erythrocytes and a few motile rods were noted. No organisms grew on a culture of the urine. The patient was anesthetized and the urethral meatus was dilated without difficulty to size 18 (French). On cystoscopic examination the right ureteral orifice was observed to lie almost directly in the posterior midline.

During the six months following dilatation the patient was well, voiding frequently and easily and having no symptoms of urinary disorder. At the age of 26 months she began to have difficulty in starting the urinary stream, and for a time voided quite infrequently. In a specimen of urine obtained by catheter the sediment was found to be normal, but E. coli were recovered from a culture. At 30 months, although there were no urinary difficulties, the gain in weight had been poor. Again a specimen of urine was obtained by catheter; it contained a few large clumps of pus cells, but there was no growth on a culture. Six weeks later the difficulty in starting the urinary stream recurred, and the patient was voiding only twice a day. This condition continued for about a month, although specimens of urine were normal. Further dilatation of the urethra was being considered when the condition improved spontaneously. During the following six months the patient remained in good health and free of symptoms.

CASE 5: A 32-month-old girl had four bouts of fever in a period of five months, the first following adenotonsillitis. For six weeks she had been anoretic and restless, fatigued and irritable, had complained of abdominal pains from time to time, and urinated infrequently, as seldom as once a day. Previously she had been very active and had urinated four or five times daily. She seemed normal on physical examination except that she was slender and frail in appearance.

A specimen of urine obtained by catheter contained a moderate number of pus cells, a few in clumps, and Gram-positive cocci were present in a smear. The infection cleared after a week's treatment with sulfonamides but the patient continued to void infrequently. No abnormality was noted in excretory urograms. With the patient under anesthesia, a sound of size 14 (French) was introduced but difficulty was encountered in passing it. After further dilatation, cystoscopy was done, but no abnormality observed except for some elevation of the interureteric ridge. In excretory urograms the upper urinary tract appeared normal. The patient had no urinary symptoms and urinated normally during six months of observation after dilatation was carried out.

Case 6: A one-year-old girl voided urine infrequently and with some distress. At the age of 28 months, and intermittently during the next two months, she urinated as infrequently as once in 24 hours and complained of pain on doing so. On one occasion catheterization was necessary to relieve acute retention of urine. Neither pyuria nor bacteruria was noted in microscopic examination. In excretory urograms the bladder was observed to be grossly distended, and the opaque medium was almost completely retained in the distended bladder after urination. The patient was anesthetized and sounds were introduced; the urethra was found to be very narrow and tight, but no abnormality was seen in cystoscopy. The urethra was dilated gradually to size 22 (French). In two years of observation after the dilatation procedure there were no urinary difficulties.

Case 7: After having rubella a girl aged 18 months urinated only two or three times a day, and then only by straining. She appeared normal on physical examination except for being small and slender. The bladder and kidneys were not palpable. Pus cells and a trace of albumin were found in the urine. Cocci were seen in a direct smear on one occasion, but no organisms grew on cultures. The patient was anesthetized and the urethral meatus, which was stenotic, was dilated. In cystoscopy the poster wall and dome of the bladder were seen to be trabeculated, and the internal vesical sphincter appeared to be hypertrophic. No abnormality in the upper tract was observed in retrograde pyelographic examination. For two and one-half months after the dilatation procedure the patient voided no more frequently than two or three times a day, but without pain or effort, and in the subsequent fourteen months she had no urinary symptoms.

ETIOLOGY

Urethral stenosis may be either congenital or acquired. In none of the authors' cases was there a history of injury or of an inflammatory process preceding the development of symptoms; it was concluded, therefore, that in all cases the stenosis was congenital.

Roen and Stept,[5] in a discussion of urethritis in girls, expressed the belief that urethral stricture predisposes to urethritis with development of periurethral fibrosis, which in turn gives rise to further stricture, bacteria being harbored in the mucosal crypts proximal to the stricture. They also were of the opinion that masturbation might lead to urethritis with the resultant obstructive sequelae, and they suggested that, conversely, the irritation of preexisting urethral disease might be the factor leading to masturbation.

SYMPTOMS

The symptoms of urinary tract infection in children may be varied and usually differ considerably from those commonly observed in adults. Probably the most frequent symptom is sudden, high fever (104° F. or higher) with associated nausea and vomiting. Less commonly does the child complain of flank pain or of mid-urinary tract symptoms such as frequency, urgency or burning. In some cases flank tenderness may be elicited on physical examination. An additional symptom commonly observed by the authors was infrequent urination, at intervals as long as twelve hours or even longer. A second, although less common symptom, was straining on urination without other distress. Other symptoms described are nocturia, and even acute retention.[2]

DIAGNOSIS

The diagnosis of urethral stenosis as the cause of recurrent urinary tract infection is relatively simple:

1. In any child who has repeated urinary tract infection, obstruction of some type should be suspected. Certain simple diagnostic procedures, beyond the basic studies of history, physical examination and urinalysis used to establish the diagnosis of urinary tract infection, should be undertaken. Excretory urograms should be made to determine whether or not there is an obstructive lesion of the upper urinary tract. In conjunction with the excretory studies, the finding that an abnormal amount of the radiopaque medium is retained in the bladder after voiding may be considered fairly good presumptive evidence of lower urinary tract obstruction. This is not an entirely dependable indication, however, since some children when asked to void do not completely empty the bladder, and in some who have only moderate urethral stenosis equivocal amounts of opaque medium are retained.

2. A presumptive diagnosis of urethral stricture having been made, the next step is instrumental examination under anesthesia. The authors believe that a general anesthetic is mandatory for several reasons: The urethra is normally a sensitive organ, and instrumentation in a child may be quite painful. There is great danger of doing serious damage to the urethra by attempting the passage of rigid instruments in a struggling child. An adequate diagnosis requires careful examination and gentle manipulation—obviously impossible without anesthesia. The psychic trauma of painful examinations of the external genitalia and urethra may be of serious consequence in later life.

Campbell[2] said that the urethra of a boy six months old should permit easy passage of a size 14 (French) sound, and that the urethra of a four-year-old male should admit a size 18 (French). The urethra of girls of corresponding ages, he said, should admit sounds two or three sizes larger. Accordingly, the urethra of a girl of six months should admit size 16 (French) and that of a girl of four years size 20 to 22. It is possible to determine, therefore, by the age of the patient and also by her size (larger children should obviously have relatively larger urethras), what the normal caliber of the urethra should be, and an attempt should be made to pass a sound of corresponding size. If obstruction is met at any point in the urethra, the diagnosis of urethral stenosis is established.

Following passage of sounds, cystoscopy should be done to determine any evidence of obstructive change in the bladder such as trabeculation or sacculation of the walls or hypertrophy of the interureteric ridge. If such changes are present, the child must be watched more closely than one who has urethral stricture without evidence of change in the bladder.

TREATMENT

Before instrumentation of the urethra or bladder is undertaken, an attempt should be made to control any acute urinary infection. In general clinical practice it may not always be feasible to make urine cultures and bacterial sensitivity studies on the urine of a child who has an acute urinary tract infection, but bacteruria may be determined by Gram-staining a centrifuged specimen of urine. The authors have found that a combination of chloramphenicol and sulfisoxazole in adequate doses for a period of six to ten days is usually sufficient for temporary control of most infections.

When the acute manifestations of the disease have subsided, the child should be hospitalized and the urethra calibrated and, if need be, dilated under anesthesia. Cystoscopy should then be performed. One dilatation usually suffices to bring about immediate and gratifying relief of symptoms. In some cases a second dilatation is necessary, but none of the patients treated by the authors required a third. At the time of dilatation and cystoscopy, a culture of the urine should be made. If organisms grow, sensitivity studies should be carried out and the appropriate antibiotic again given.

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New Medical Care Exhibit

The story of how local medical societies bring medical care and medical services to more and more American people is the subject of a new exhibit which is nearing completion by the A.M.A.'s Bureau of Exhibits. "You and Your Medical Care" exhibit features emergency call services, voluntary health insurance, early detection and prevention of such diseases as cancer and tuberculosis, community health councils, grievance committees and sources of health education information.

A separate unit has been designed for each subject, making the exhibit suitable for showings in every community . . . any portion of the exhibit may be omitted if a state or county society has not yet developed a program on a certain subject. The exhibit will be available shortly after the first of the year.

New Vistas in Psychosomatic Medicine

ALFRED COODLEY, M.D., *Los Angeles*

• Further understanding in the field of psychosomatic medicine has come to light recently as the result of new approaches and methods of research.

Such diseases as hypertension, ulcerative colitis, rheumatoid arthritis, peptic ulcer, diabetes and cardiovascular dysfunction may represent the body's method of adapting to chronic stress, according to Selye's concept of the general adaptation syndrome, with the phases of alarm, resistance and exhaustion.

It has been postulated that unconscious dynamics of which patients are unaware are crucial in the understanding and interpretation of physiological research and therapy of patients with psychosomatic disorders.

The concept of partial regression was applicable to patients with psychosomatic illness who were highly successful in social, economic and professional spheres. The illness was viewed as a protection against psychological regression by limited somatic regression.

Pilot studies suggested that patients seriously ill with such disorders as ulcerative colitis and asthma responded favorably to enforced psychological regression and exploitation of dependency by excessive coddling, babying and mothering by an "all-giving" physician in a hospital setting.

Good physician-patient relationship remains the keystone in therapy and is the common denominator to many so-called successful modes of treatment.

IT HAS OFTEN BEEN said that a physician never stops learning. Laissez-faire attitudes on the part of physicians have been replaced by active research and attempts at dynamic understanding. This progressive orientation has made the psychosomatic approach possible.

Comprehensive reviews of the literature relative to the understanding and treatment of psychosomatic disease have been given by Grotjahn[6] and Levine.[12] The credit for much of the basic awareness in the field of psychosomatic medicine goes to Franz Alexander.[1] He pointed out that disturbances of the vegetative functions of the body are the result not of one but of a variety of etiologic factors, both organic and psychological in nature. The vulnerability of an organ or organ system is determined by its hereditary constitution and by environmental influences. It is important to differentiate between hysterical conversion phenomena and the psychosomatic vegetative or organ neurosis. The conversion symptom partially solves the emotional conflict by expressing it symbolically through the voluntary neuromuscular system. The vegetative symptom does not solve the conflict because it is only a physiologic concomitant involving the involuntary neuromuscular system. In hypertensive patients, for example, repressed rage feelings persist despite the concomitant elevation of blood pressure.

Cannon[2] elucidated the homeostatic equilibrium whereby, in a situation of danger, the organism responds with flight or fight and a concomitant elevation of blood pressure and mobilization of carbohydrate. Apparently, an imbalance between the well-integrated overt behavior and the internal vegetative responses occurs in persons suffering from inadequate and unhappy interpersonal relationships. In persons with neurotic conflicts, the emotional expressions are blocked and cannot find satisfactory outlets through motor activity or verbalization. When such a situation persists for a critical period of time in a susceptible or somatically predisposed person, gross changes in structure occur. For example, malignant hypertension follows transient rises in blood pressure in response to repetitive stress, or peptic ulcer develops after prolonged chronic hypermotility, spasm and increased secretory activity of the stomach.

A current theory postulates that patients with psychosomatic symptoms are likely to have an infantile personality. Lhamon and Saul,[13] on the other hand, felt the psychosomatic symptom is often a deep, partial vegetative regression which prevents psychologic regression. The high incidence of psychosomatic disease in executives with heavy responsibilities and relatively mature personalities was explained as "paying with the symptom for not regressing psychologically." Instead of schizoid withdrawal, temper outbursts, alcoholism, and the like, such patients save themselves by partial physiologic regression.

One of the vital areas of research into psychosomatic medicine has been the attempts to demonstrate experimentally and clinically the validity of

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theoretical formulations by means of physiologic methods. Wolf and Wolff[27] have done much of the pioneer work along these lines, particularly in the realm of physiology of the stomach. Wolf[28] demonstrated on human subjects with intact and with exposed stomach mucosa that at least two divergent patterns of reaction to stress could be observed: one, a riddance, ejection pattern in which the subject behaves as if poisoned, reacting with sudden cessation of gastric digestion, nausea, and vomiting; the other, a pattern of gastric hyperfunction as if about to be fed, and associated with hyperacidity, hypermotility, low mucoproteose and epigastric pain. In these circumstances the engorged and reddened gastric mucosa is unusually fragile and subject to ulceration. Any subject may react with either pattern under appropriate stressful situations, but most persons who have a gastric reaction follow characteristically one pattern or the other.

In recent years two primary and basic questions have arisen as to the conclusions reached by Wolf and Wolff[27]: (1) Might not the patient with a gastric fistula have responses to environmental factors entirely different from patients without a fistula? (2) Which are the more important, conscious factors or unconscious factors, in the interpretation and evaluation of changes in gastric function? Mirsky and co-workers[17] attempted to answer these questions by a unique technique. By assay of uropepsin in the urine, they were able to determine gastric activity with none of the disadvantages of withdrawal of gastric contents or need for direct viewing of fistulous mucosa. Concurrent psychodynamic changes over a prolonged period were observed. It was concluded that in almost every instance where an increase in uropepsin secretion occurred it was in response to some life situation which threatened or mobilized the unconscious wishes for love and a desire to be taken care of. Such changes in secretion could not be correlated with conscious awareness of emotional reactions involving hostility, anxiety, etc.

Crider and Walker[3] observed a female patient with a large gastric fistula by means of psychophysiologic techniques. They found that the patient's gastric secretion was inhibited by anger, resentment or fright, contrary to the observations of Wolf and Wolff.[27] The fundamental difference in physiological response to emotional stress in the two sexes led to the speculation that it was correlated with the male's greater predisposition for duodenal ulcer.

Margolin's work[14, 15] offered a remarkably new and extremely valuable methodology and insight into psychosomatic research. Working with the same female patient studied by Crider and Walker, he was able to show both inhibition and excitation of gastric activity in association with the conscious emotions of anger, guilt and anxiety. He felt the unconscious mental content provoked by stimuli in the physiological observation situation appeared to be an essential determinant in the psychophysiological reaction manifested. Margolin found this patient's fistulous opening had become eroticized and associated during one period with cunnilingus fantasies in relation to the examining physiologist. It was necessary to eliminate this artifact through psychoanalytic treatment before the organ could begin to assume its native functional pattern. This suggested that no patient with a gastrostomy, with all the pathological inflation and emotional distortion a mutilated organ produces, can be considered an accurately representative human being for physiological research. In other words, every situation involving manipulation and instrumentation by an observer evokes psychic stress of varying intensity and can significantly and meaningfully influence the physiological data.

GENERAL ADAPTATION SYNDROME

Another aspect of research into psychosomatic medicine embodies a concept that may well be one of the significant contributions of our generation to the understanding of disease. This, of course, relates to the general adaptation syndrome, or, G-A-S, as propounded by Selye.[23] Some years ago Selye noted that in animals the organism responds in a stereotyped fashion to many different factors, such as infection, intoxication, trauma, nervous strain, heat, and fatigue. The only common feature is that they place the body under a situation of stress. Therefore, the stereotyped response must represent a reaction to systemic stress as such. The manifestations of this stress response were adrenocortical enlargement, thymicolymphatic involution, gastrointestinal erosions and other manifestations of shock.

The adrenal cortex seemed to flourish on stress, and Selye suspected this must represent a useful nonspecific adaptive reaction which he termed the "alarm reaction" of the body's defense forces. This later proved to be but the first stage of the G-A-S. The next stage is that of resistance in which the adaptation becomes optimal, and is followed by the stage of exhaustion in which the acquired adaptation is lost. Since hypophyseetomy prevents the adrenal response that otherwise would occur during the alarm reaction, apparently stress stimulates the cortex through adrenocorticotropic hormone. Later it was found that experimental replicas of the so-called hypertensive and rheumatic diseases could be produced with mineralocorticoids such as desoxycorticosterone acetate. Glucocorticoids such as cortisone elicited the changes in the blood characteristic of the alarm reaction and in many respects were found to antagonize the action of mineralocorticoids.

Selye concluded that the pathogenicity of many systemic and local irritants depends largely upon the function of the hypophyseal-adrenocortical systems. The latter may either enhance or inhibit the body's defense reactions against such agents, and derangements of this adaptive mechanism may be the principal factors in the production of the so-called diseases of adaptation. Apparently, G-A-S does not merely represent a transitory emergency adjustment to changes in the environment, but is an adaptive reaction which comprises the "learning" of defense against future exposure to stress, and helps to maintain a state of adaptation once this is acquired. Further, the process of adaptation may itself become the immediate cause of diseases—that is, derangements owing to maladaptation.

REACTION TO SYMBOLS

Life stress in a somewhat different context has been dealt with by Harold Wolff.[29] He felt an amassing body of data demonstrates the growing importance to medicine that, for man, reactions to threats in the form of symbols, especially when sustained, may be more significant than responses to assaults. It is apparent from most recent studies in psychosomatic medicine that the doctor-patient relationship is a crucial determinant in successful treatment and that significant life stresses can be correlated with the precipitation and exacerbations of the disease. The findings of Grace and Wolff[5] in chronic ulcerative colitis, of Hinkle and co-workers[7, 8] in diabetes, of Holmes[10] in nasal disorders, of Wolff[29] and Stevenson[24] in cardiovascular disorders, etc., corroborate such impressions.

Reiser and co-workers[18] studied 230 unselected hypertensive patients by a multidisciplinary approach and found emotionally stressful situations frequently affected the course of hypertension in terms of its onset, associated symptoms and complications. Results of the study showed clearly that any so-called "specific" treatment of hypertension must be interpreted in the light of the doctor-patient relationship which parallels it. In another study of 12 patients with malignant hypertension, Reiser[19] found a close and meaningful correlation between the precipitation of the disease and the occurrence of emotionally charged life situations. Similar correlations could be made relative to the onset of benign hypertension, to fluctuations in blood pressure and to exacerbations of the clinical course.

Recent basic investigations into physiology of the blood by Schneider and co-workers[22] indicated that with anxiety, tension, fear and anger the clotting time of the blood was shortened, the relative viscosity increased and the blood pressure elevated. They postulated that these alterations were part of a protective reaction pattern during transient periods of stress when offensive action may be necessary. Such patterns, if chronically and inappropriately used—as may be true in hypertensive subjects — could prove detrimental by conducing to intravascular thrombosis and by increasing the work of the heart through increased peripheral resistance owing to the greater viscosity of the blood.

Further insight into some of the psychosomatic implications in geriatrics was obtained through the work of Ripley and Wolff[20] on glaucoma. They concluded that in some persons a concomitant participation of the eye, manifested by increased intraocular pressure, occurs with emotional upheaval such as anger, anxiety or depression. It was felt this might represent an inappropriate and ineffectual biologic pattern of mobilization. Such a response occurs particularly in the aging period when there is frequently a decrease in the flexibility and effectiveness of psychologic and physiologic mechanisms maintaining homeostasis.

All the theoretical formulations and psychodynamic patterns evolved through detailed research into psychosomatic problems would be of limited value were it not for the therapeutic implications and possibilities made available. Gildea[4] reviewed the current literature through 1948 pertaining to personality structure in various psychosomatic disorders with particular reference to responsiveness to therapy. He summarized the majority of available reports by indicating that psychotherapy of any kind had no sustained effect in arresting progression of hypertension. The same seemed to be generally the case in patients with rheumatoid arthritis and ulcerative colitis. Patients with hyperthyroidism responded moderately well to supportive psychotherapy but occasionally were especially resistant to psychoanalytic therapy. Most investigators agreed that a high percentage of patients with peptic ulcer responded favorably. Patients with coronary disease reacted with an arrest of many symptoms as the result of guidance and psychotherapy of an authoritative type. Patients with bronchial asthma also responded well to either brief psychotherapy or psychoanalysis. The pronounced variation in therapeutic response seemed to depend on personality structure as well as on the organ system involved. Recovery was most rapid in patients who expressed and found appropriate outlets for their underlying conflicts.

SPECIFIC HORMONAL THERAPY

One of the newer and important aspects in the treatment of psychosomatic disorders relates to the use of specific hormonal therapy such as corticotropin (ACTH) and cortisone. Favorable results of a temporary nature while treatment was being given have been obtained in rheumatoid arthritis, ulcerative colitis, and asthma.[9, 25] Rome and Braceland[21] observed that cortisone and corticotropin are potent pharmacologic agents which may deprive the patient of the keystone of his psychologic defense. As Kirsner and Palmer[11] observed, corticotropin may conceal the overt manifestations of emotional conflict but it does not seem to dissolve the conflict. Emotional disturbances usually persist after therapy and may precipitate recurrence of the disease.

PSYCHOLOGICAL REGRESSION THERAPY

An extremely provocative, albeit precarious, method of approach in the treatment of seriously ill hospitalized patients with ulcerative colitis and asthma was outlined recently by Margolin and coworkers.[16] These illnesses seemed to alternate with psychotic reactions in many cases. It was observed that treatment with corticotropin or with hypnosis or with an operative procedure for the disease process appeared to result either in psychotic manifestations or in phantom recurrence of symptoms. Use of uncovering techniques aggravated the patient's illness, and psychoanalysis seemed to result in a race against time in the disease. On the other hand, active therapy sometimes led to miraculous results. It was decided to follow a plan of action allowing for psychological regression to an unambivalent or infantile state of development since the essential psychopathologic condition was associated with pronounced ambivalence.

In the first period of treatment such psychological regression to the early months of life was accomplished by exploiting the patient's dependent needs. The patients were fed on a "demand schedule"; the physician spent many hours with the patient, feeding, stroking, bathing and siding with the patient against nurses and other physicians, and in every sense became an attentive mother surrogate. In the next phase of therapy, preverbal interpretations through action of the therapist were carried out. Because of the inherent dangers, a supervising analyst watched over the therapist, structuring what was happening as in a dream, interpreting the countertransference, and acting as a control for the therapist. In this phase, the increased regression may simulate psychosis. The last phase of treatment involved a weaning process lasting several months. It was observed that life-saving remissions occurred as the result of such heroic psychologically oriented therapy. It was noted, however, that some of the asthmatic patients obtained remissions of their psychosomatic illness only to develop depressive reactions.

As Whitehorn[26] emphasized, chronic disease and marginal conditions of persistent ill health now demand a larger share of medical attention and require from physicians greater understanding and skill in dealing with human nature. In aiding patients to deal with stress, to modify patterns of living, and particularly to resolve the internal emotional conflicts that impair life for so many unhappy people, modern physicians need something that traditional medical education and training has neglected for the most part. It is to be hoped that increased awareness of the need for a complete evaluation of the current dynamic forces impinging on the individual, correlated with previous genetic or childhood predisposing and conditioning forces, will gradually become widely disseminated until diagnostic and therapeutic capabilities are greatly enhanced.

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Discussion by PHILIP SOLOMON, M.D., Brookline, Mass.

The popularity of the term *psychosomatic* is an indication of physicians' gradual but reluctant increase of interest in psychiatry. In a sense it is a euphemism; pick up any article on a psychosomatic subject and you find mostly psychiatry. One can perhaps understand a layman's ambivalence toward psychiatry, but why should the physician share it? The answer must be, in part, that psychiatry has not been successfully taught in medical schools and, in part, that physicians, like their lay brethren, also have a fear of what lies hidden in their unconscious thoughts. The mere thought of incest, homosexuality, parricidal wishes and perversion fantasies makes them panicky. By minimizing the importance of psychiatric matters, especially where the unconscious is concerned, they can reassure themselves that all is yet well.

The history of medicine has shown an interesting change in the understanding of interpersonal relationship between physician and patient. In the days when a physician's duties related chiefly to the care of traumatic lesions, the drainage of abscesses and blood-letting, it was an advantage to be unemotional. The tradition of the aloof and somewhat disdainful doctor of physic was established. In the era of great bacteriological discoveries, this tradition was carried on in the person of the "scientific" physician, who tried to lean exclusively on the reports of the laboratory. We still see it today in physicians who look upon the patient as an intriguing collection of metabolic processes, who delight in increasingly complicated diagnostic tests, and who turn pale or blush if the patient asks a too-personal question.

The cold imperturbability that was an asset in the days of the barber-surgeons is now an atavism. Since the development of psychiatry, and particularly since the development of psychoanalysis, it has become clear that the physician's personality is a potent instrument in therapy. The country doctor knew it long ago, and "bedside manner" has been a matter of some interest for several generations. It remained for Freud to make interpersonal relations the object of scientific study. Since the patient's emotional reactions are important not only in psychiatric conditions but in all organic disorders as well, psychotherapy and the physician's personality must be reckoned with in every branch of medicine. Today a physician who does not understand the rudiments of psychotherapy and the proper role of his own personality should be considered as negligent of his duty as one who does not know the use of drugs.

Some of the recent work described by Dr. Coodley, particularly that of Margolin, throws new light on a difficult question in psychiatry. When does the therapist *gratify* a patient's emotional needs and when does he *interpret* them? For example, in the case of an infantile patient who wishes to be mothered, when should he actually be mothered, and when should it simply be pointed out to him that he wishes to be mothered? We know, in a general way, that the answer depends on the character of the patient. With children and psychotic persons, we frequently gratify. This may be done symbolically. With neurotic persons and more or less mature adults we often interpret—although this must be done when the patient is ready. Perhaps it is all a matter of gratification at different levels, with interpretation being a kind of gift or attention at a high level of abstraction. In any event, in the psychosomatic conditions of colitis and asthma, we have reason to believe that gratification at an infantile level may be life-saving in critical situations. Weaning, gradual interpretation, and final integration can come later. I had the privilege of witnessing work of this kind recently at the Mt. Sinai Hospital in New York. It is convincing evidence that psychoanalysts, who have been the prime movers in the field of psychosomatic medicine from the beginning, are continuing to progress, as Sigmund Freud did throughout his life, from hypothesis to experiment to new knowledge and new hypothesis in the classical and time-honored method of science.

CASE REPORTS

- **Benign Adenoma of the Adrenal Cortex**
- **Uterus Bicornis Unicollis; Hematometra in Rudimentary Horn**
- **Restoration of Speech in a Patient with a Severe Wound in the Trachea**

Benign Adenoma of the Adrenal Cortex

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HYPERFUNCTION of the adrenal cortex may be caused by solitary tumors or by diffuse hyperplasia.[6, 7] Cushing's syndrome, once rarely observed, has become familiar to physicians since the beginning of the widespread use of 17 hydroxy-11-dehydrocorticosterone (cortisone) and corticotropin (ACTH). Failure to recognize and properly attribute symptoms of Cushing's syndrome may prevent cure of a patient with disease caused by hyperfunctioning adrenal cortical tumor.

The present case is reported because of the long duration of symptoms resulting from a benign cortical adenoma of unusual size, and because of the administration of cortisone and corticotropin in the preoperative and postoperative care of the patient.

CASE REPORT

A 30-year-old woman complained ot progressive pain in the lower thoracic area of the back and of masculinization of three years' duration. The patient had developed normally through adolescence, with menarche at 13 years of age. At 20 years of age there was sudden cessation of the menses. This was followed by gradual onset of fatigue, nervousness, excessive perspiration, and an increasing feeling of warmth. During the next five years, however, the patient considered her general health to be satisfactory and served as a member of the United States Navy from May of 1944 to February of 1946. In examinations during this period of military service no obvious abnormalities were noted. However, there was a persistent tendency to gain weight and a gradual increase in the severity of the previously described symptoms.

Shortly after the patient was married, three years before admittance to Stanford University Hospital, she noted the onset of hirsutism involving the face, forearms, breasts and legs. The condition progressed and for a number of months she shaved her face daily and the other areas twice a week. The weight continued to be about 130 pounds despite continuous efforts to reduce. The facial configuration became rounded, and the patient noted a plethoric appearance of the skin, and easy bruising. During the 18 months before admittance the pain in the back was distressing and the patient noted a decrease of one-half inch in her height. Her voice became lower and more masculine in quality and her personality more domineering. There was no history of endocrine disease in the family.

The patient was moderately obese and had a large trunk, small extremities, and a round "moon face" (Figure 1). Moderate generalized hirsutism was present, most pronounced on the face, arms, legs and breasts. There was a plethoric flush of the face, but no striae or acneiform lesions were noted. The thyroid gland was not enlarged. A "buffalo hump" was present over the cervicothoracic spine, and the breasts were small. The lungs were clear to auscultation and percussion. The heart was not enlarged, the rhythm was regular and the pulse rate 92. The blood pressure was 160 mm. of mercury systolic and 94 mm. diastolic. No unusual masses were palpated in the abdomen. The clitoris was slightly enlarged but no other abnormality was observed in pelvic examination. There was no edema about the ankles and no areas of ecchymosis. No localized muscular weakness was noted, although a decrease in muscular mass and tone was apparent in both the arms and legs.

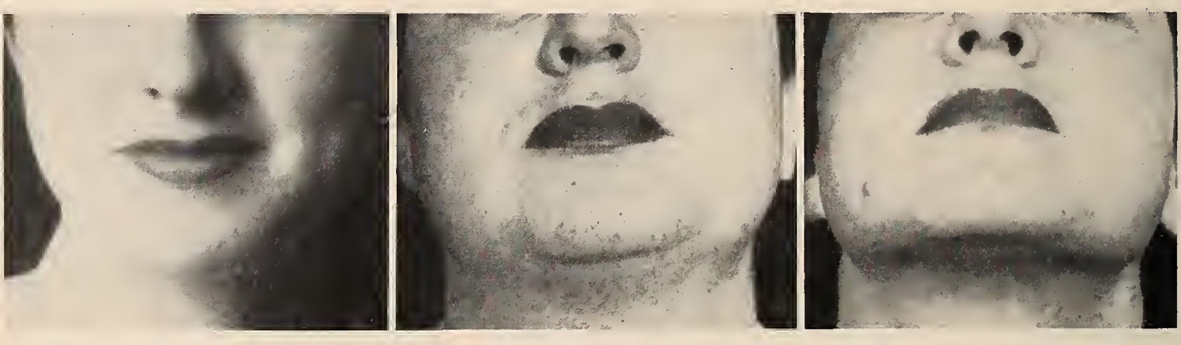

Figure 1.—Photographs of patient. *Left*, 1940, before onset of disease; *center*, 1951, before operation; and *right*, 1952, three months after operation.

From the Department of Medicine, Stanford University School of Medicine, San Francisco, California.

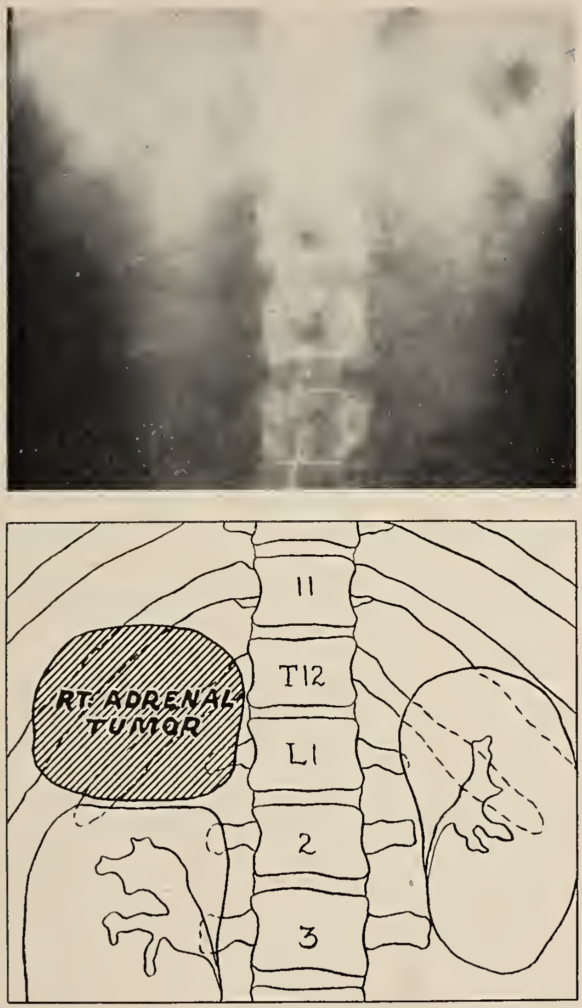

Figure 2.—X-ray of the abdomen and diagram showing the right adrenal tumor.

Laboratory data: Erythrocytes numbered 5,860,000 per cu. mm. and the hemoglobin content of the blood was 18.6 gm. per 100 cc. The cell volume was 54 per cent of the whole blood. Leukocytes numbered 16,500 per cu. mm.—74 per cent polymorphonuclear cells, 3 per cent eosinophils, 20 per cent lymphocytes, and 3 per cent monocytes. The results of urinalysis were normal except for a trace of protein. The content of sugar in the blood was 109 mg. per 100 cc., of serum chloride 101.5 mEq. per liter, of sodium 141 mEq. per liter, and of potassium 5.5 mEq. per liter. The calcium content was 9.6 mg. per 100 cc., phosphorus 2.5 mg. and alkaline phosphatase 5.9 units (Bodansky). The creatinine content in the blood was 1.0 mg. per 100 cc. Excretion of 17-ketosteroids was 57.8 mg. in 24 hours. An electrocardiogram was normal. Intravenous pyelograms showed the right kidney outline to be flattened superiorly (Figure 2) and the whole kidney appeared to be depressed by an overlying mass of soft tissue which was roughly circular in outline and 8 cm. to 10 cm. in diameter. The mass was more clearly visualized in laminograms. No abnormalities were observed in x-ray films of the chest and skull.

In preparation for operation, corticotropin was given intramuscularly, 25 mg. every six hours for two days. The day before operation and again on the morning of operation 150 mg. of cortisone was given intramuscularly. An incision was made over the right twelfth rib, which was excised in its entirety. A portion of the eleventh rib near the posterior attachment was also removed. Excellent exposure was obtained when Gerota's fascia was opened and an adrenal tumor lying close to the superior pole of the right kidney was easily seen and felt. It was removed without difficulty and the wound was closed in the usual manner.*

An infusion of 1000 cc. of 5 per cent glucose in saline solution with 100 cc. of aqueous adrenal extract (Eschatin®) was carried out during operation. There were no periods of hypotension during the procedure or afterward. Corticotropin and cortisone, 25 mg. and 50 mg., respectively, were given every six hours until the third postoperative day. From the third through the sixth postoperative day the dosage of both drugs was reduced by one-half each day, and at the end of one week the patient was receiving no special medication. Throughout this period no evidence of adrenal cortical insufficiency appeared. The blood pressure became 126 mm. of mercury systolic and 80 mm. diastolic during operation and it remained fairly constant in a normal range thereafter. In an x-ray film of the abdomen taken on the seventh postoperative day elevation of the right kidney to the normal level was noted. On the fourth postoperative day the 17-ketosteroid excretion was 10 mg. in 24 hours and on the sixth postoperative day was 3 mg. in 24 hours.

The patient was discharged on the eighth postoperative day without medication. During the following three weeks she noticed slight "light-headedness" on standing and described herself as being "weak, tired and washed out." The blood pressure remained normal and no treatment was given for the symptoms of mild adrenal insufficiency. Polycythemia was no longer present. Six weeks after the operation the patient noted a change in facial contour (see Figure 1) and had lost the feeling of always being warm. Muscle strength was improved. Ten weeks after operation, after ten years of amenorrhea, the patient had a normal menstrual period of five days' duration. Hirsutism decreased, and the patient shaved her face only once every three to four days. Only a trace of abnormal hair growth was observed 48 hours after shaving. A second menstrual period followed an interval of 28 days. The patient then became pregnant about four months after the operation. When the patient was last observed seven months after the operation, there was no pain in the lower thoracic spine, evidence of hirsutism was minimal, the weight was 100 pounds, and the pregnancy uncomplicated. (A report has been received that the patient was delivered of a normal child at term.)

PATHOLOGICAL REPORT

The specimen, an encapsulated spherical tumor 9 cm. in diameter, weighed 231 grams. The capsule was quite thin and through it could be seen yellow areas. On one side was a leaf-like folded structure about 0.5 mm. thick which appeared to be a remnant of the adrenal gland. The cut surface of the tumor was moderately firm and composed in part of grey, slightly translucent patches several millimeters in diameter alternating with areas of opaque bright yellow substance. There was no gross evidence of necrosis. A number of thin walled vessels were present.

Histologically the tumor tissue resembled adrenal cortical substance although cord formation was minimal. There were well defined groups of tumor cells bordered by thin fibrous septa. The cells were rounded or polygonal with abundant cytoplasm. The nuclei were rather deeply stained, slightly elongated, and somewhat varied in size. Prominent nucleoli were seen but no mitotic figures were observed. A number

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*The operation was done by Dr. Gunther W. Nagel, clinical professor of surgery, Stanford University School of Medicine, San Francisco.

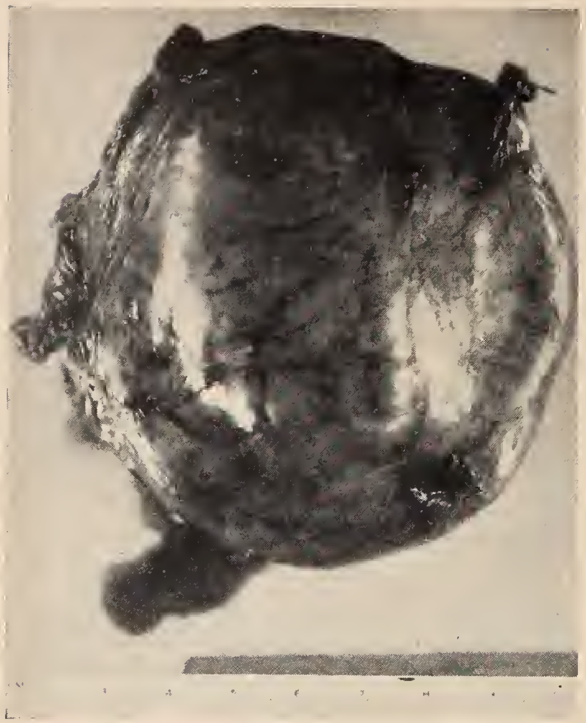

Figure 3.—Photograph of the gross specimen: right adrenal tumor.

of scattered large, single, unstained nuclear vacuoles were seen, and in the cytoplasm of many of the cells small, rounded. well-defined, faintly stained, slightly basophilic bodies about one-fifth the diameter of the nucleus were noted. The tumor was encapsulated and its appearance did not suggest malignant change. On one side was a remnant of adrenal cortical tissue which was very thin and composed of vacuolated cells with small nuclei.

Diagnoses: 1. Adenoma, adrenal, cortical. 2. Atrophy, adrenal cortex, severe.

DISCUSSION

The patient had many of the classical signs of Cushing's syndrome including virilism, facial and abdominal obesity, thin arms and legs, high color, hypertension, polycythemia, fatigue, and muscular atrophy. Other conditions frequently associated with Cushing's syndrome—kyphosis, purplish striae, ecchymosis, diabetes, and hypochloremic alkalosis—were not present. The patient became discouraged early in the course of the illness, when medical care given at that time was not successful, and reported for further examination only because of increasing thoracic back pain and progressive changes in appearance and personality. Once clinically suspected, the diagnosis was readily confirmed and surgical extirpation of the tumor was accomplished. Air insufflation was not attempted, and the left adrenal gland was not examined surgically since the tumor of the right adrenal was clearly shown by roentgenograms. The stimulation of the remaining atrophic adrenal tissue with corticotropin (ACTH), and the associated use of cortisone during the immediate preoperative and postoperative periods, precluded a stormy course and made the prolonged use of large amounts of adrenal extract[1,2] unnecessary.

The pathological report revealed how much atrophy can take place in an adrenal gland when a functioning hormonal tumor has been present for many years. It is of interest that the remaining adrenal could take over adequate function in the period of one week. The response to removal of a solitary adenoma can be expected to be more satisfactory than that obtained by subtotal resection of a diffuse hyperplastic gland.[3,5] Adrenal tumors the size of the lesion removed in the present case are usually the result of malignant disease, and complete excision is rarely possible.[4]

SUMMARY

A case of a 30-year-old woman with symptoms of Cushing's syndrome for ten years caused by a large adrenal cortical adenoma is reported. The preoperative and postoperative use of corticotropin (ACTH) and cortisone simplified the management of anticipated acute adrenal insufficiency.

490 Post Street.

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Uterus Bicornis Unicollis; Hematometra in Rudimentary Horn

CHESTER L. ROBERTS, M.D., *Glendale*

HEMATOMETRA in the rudimentary horn of a bicornate uterus is rarely suspected when menstrual periods have been regular and without incident for some time after menarche. Although this condition is infrequent, it must be considered when symptoms simulating acute appendicitis are observed in young women complaining of dysmenorrhea.

CASE REPORT

The patient, a 15-year-old girl, first observed May 26, 1948, complained of abdominal and pelvic discomfort, and nausea. Menstruation had begun at the age of 14. The flow was moderate and lasted three or four days. The menstrual cycle was 28 days in duration. During the first year, menstrual periods were not accompanied by pain or discomfort.

In the second year, discomfort during menses began and it increased gradually. Pain would start on the second or third day of menses and persist to the end of the period, and residual soreness and tenderness were noted in the pelvic region—particularly on the right side—for a day or two thereafter. No pain or discomfort was present at any other time. Upon physical examination the patient was observed to be well-nourished and well-developed. Moderate lower abdominal tenderness was noted, but no masses could be felt. Upon pelvic examination the outlet was noted to be virginal. Palpation through the rectum elicited some tenderness low in the pelvis. No abnormalities were observed elsewhere.

As examination of the blood gave no evidence of acute infection, appendicitis was considered to be ruled out.

The patient was observed at intervals during the next ten months, and during that time dysmenorrhea increased and the pain finally became almost unbearable. On March 11, 1949, on the second day of the menstrual period, the patient had an attack of pain in the right lower quadrant of the abdomen. Leukocytes in the blood numbered 11,500 per cu. mm.—85 per cent mature polymorphonuclear cells and an abnormally high number of stab forms. Appendicitis was suspected, and operation was carried out immediately.

A McBurney incision was made on the right side. The cecum was not in the right lower quadrant. The uterus was bicornate with a rudimentary right horn. The incision was extended to permit adequate exploration of the pelvis and abdomen. The cecum, which was in the left lower quadrant, was brought into view and the appendix, which was normal, was removed.

The right cornu of the uterus, approximately 5 cm. in diameter, was extremely tense in appearance, with hemorrhagic areas present in the myometrium. An aspirating needle was introduced into the tissue mass and a quantity of tarry, tenacious bloody fluid withdrawn. The right cornu was dissected free from the main body of the uterus, leaving the myometrium of the main portion as intact as possible, and the opening in the right broad ligament was closed by continuous lock sutures of No. 00 chromic catgut. The muscles were approximated, and the fascia was closed. Three sutures were placed in Scarpa's fascia, and the skin was closed with clips.

Upon examination of the excised cornu it was noted that the canal in the rudimentary horn had no outlet into the vagina.

The patient recovered and thereafter had no premenstrual or menstrual pain.

DISCUSSION

Few cases of hematometra occurring in rudimentary horns of bicornate uteri have been reported in the literature. Nevertheless, since in 80 per cent of cases of rudimentary horn the horn possesses a canal which does not communicate with the vagina,[1] the possibility exists that menstrual blood may collect in the cavity of any atresic excavated horn and eventually cause hematometra. Although many surgeons believe that hysterosalpingectomy should be done in such cases since pregnancy might cause a rupture of the remaining body of the uterus, the more conservative operation was decided upon in this instance to preserve the capacity for normal motherhood.

Unilateral renal agenesis, frequently associated with uterus unicollis, was not present in this case.

606 North Brand Boulevard.

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Restoration of Speech in a Patient with a Severe Wound in the Trachea

WENDELL A. WELLER, Colonel, M.C., U.S. Army

A 30-YEAR-OLD SOLDIER in the United States Army was clearing a mine field when explosion of a mine caused penetrating wounds of both eyeballs, traumatic amputation of the right leg below the knee, piercing of the throat into the trachea below the level of the cricoid cartilage, and multiple lacerations of the face, shoulders, arms and hands. Emergency treatment consisted of insertion of a tracheotomy tube, removal of the mutilated remains of the right leg, application of dressings, and general supportive treatment.

The patient arrived at Letterman Army Hospital, San Francisco, five days after injury. Upon physical examination, pronounced chemosis of the conjunctiva and edema of the eyelids was noted. There was no perception of light in either eye. Purulent secretions were draining from the penetrating wounds of both corneas. Foreign bodies were imbedded in multiple wounds of the face, shoulders, arms and hands.

The skin and subcutaneous tissue were absent over an area two inches in diameter at the site of a wound just above the suprasternal notch and penetrating into the trachea. A No. 5 tracheotomy tube was in the center of the wound. The patient could talk well although huskily, by closing the tube with a finger. On indirect laryngeal examination paresis of the true cord on the left side was noted. The right true cord moved normally. There was no difficulty in swallowing.

During the first few weeks of hospitalization, the patient received penicillin therapy, and general supportive measures were carried out.

About four weeks after admittance to the hospital, the patient became unable to talk when he closed off the tracheotomy tube, about which the wound healed. The great mental disturbance caused by this development brought to the foreground an almost uncontrollable temper.

On bronchoscopic examination pronounced stenosis, caused by what appeared to be granulation tissue, was noted at the level of the cricoid cartilage and the adjacent tracheal rings. The stenosed area was dilated with a No. 18 (French) rubber-tipped bougie, the largest size that can be passed through an 8 mm. bronchoscope. Four days later tracheal dilators Nos. 21F and 24F were passed through the stricture. Then a No. 2 braided silk thread was passed through the larynx into the trachea and brought out through the wound in the neck. A rubber tube 7 mm. in diameter and 3.5 cm. long was fastened to the thread and introduced through the stenosed area. The short rubber tube, the upper end of which was below the vocal cords, was held below by the tracheotomy tube and kept from being coughed out by the thread.

By the same procedure four days later the tracheal tube was withdrawn and another of the same length but 9 mm. in diameter was inserted. It was left in place for ten days, then was replaced with one 10 mm. in diameter. After another ten days it was withdrawn and a tube with a diameter of 11 mm., cut at an angle across the lower end to effect a closer fit against the tracheotomy tube, was placed. The patient still could not get air around the tracheotomy tube and could not talk. Upon inspection through an 8 mm. bronchoscope it was observed that although most of the

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From Letterman Army Hospital, San Francisco.

Presented before the Section on Eye, Ear, Nose and Throat at the 81st Annual Session of the California Medical Association, Los Angeles, April 27-30, 1952.

granulation tissue above the tracheotomy tube had been pressed against the tracheal wall, enough remained about the tracheotomy tube to block the trachea.

Several days later a 6 mm. bronchoscope was used, and as the bronchoscopic tube was introduced the tracheotomy tube was withdrawn. With a little force the bronchoscope was pushed past the granulations which had formed about the tracheotomy tube. There was some bleeding and the patient coughed considerably. From approximate measurements taken with the bronchoscope in the trachea it was determined that about 10.5 cm. of tubing would be needed to bridge well past the granulated area. Before the bronchoscope was removed, a heavy silk thread was introduced through the tracheotomy stoma, grasped through the bronchoscope and brought out the patient's mouth.

A No. 9 Portex® Magill endotracheal plastic tube, which has an outside diameter of 13 mm., was used to span the traumatized area. This particular kind of tubing was used because secretions do not cling to the smooth surface and it was felt that the material of which it is made would be the least irritating to tissues. The section used was 10.5 cm. long, including the diagonally cut tip. The diagonal tip facilitated introduction of the tube through the larynx and the stenosed area of the trachea. To prevent its slipping, a No. 2 braided silk thread was passed through the anterior wall of the tube 3.5 cm. from the upper end and tied to the thread previously placed in the trachea. The larynx was exposed with a Jackson laryngoscope and the diagonal edge of the "Portex" tube was introduced into the glottic chink. Grasped at the upper end in laryngeal forceps and with a 4 mm. bronchoscope inside as a stylette, the tube was slipped into the trachea as the slack of the braided silk thread was taken up. The tube settled into place well below the true vocal cords and caused little irritation. The patient was able to breathe easily through the tube and was immediately able to talk. The thread emerging on the anterior surface of the neck was anchored to a one and one-half-inch length of the same kind of tubing.

The plastic tube caused the patient very little discomfort. In oblique roentgenograms of the neck and chest on Feb. 27, 1951, after the tube had been in place fourteen weeks, columns of air about the upper and lower ends of it were noted. There was an area about 4 cm. in length, below the glottis, in which there was no air between the tube and the trachea. The left true vocal cord was again functioning normally.

On April 2, 1951—the tube had then been in place about four and one-half months—the supporting braided silk thread broke and the tube slipped into the right main stem bronchus. It was removed, and on bronchoscopic examination of the trachea at that time a few small pedunculated granulations were observed at the level of the upper end of the intratracheal tube when it was in place. The granulations were removed with a cupped forceps. At the previously stenosed area there was flattened granulation tissue over an area of 3 to 3.5 cm., most of it on the posterior wall but with some extension to the lateral walls. Farther down there was no evidence of tracheal damage. The anterior wall of the trachea was smooth and there was no granulation at the site of tracheostomy. Clinically the airway seemed to be adequate.

The intratracheal tube that was removed was darker in color than it had been when it was inserted but there was no evidence that it had deteriorated in either consistency or elasticity during the four and one-half months it was in place.

In roentgen studies with Lipiodol,® some reduction in the lumen of 3 or 4 cm. of the upper trachea was noted (Figure 1).

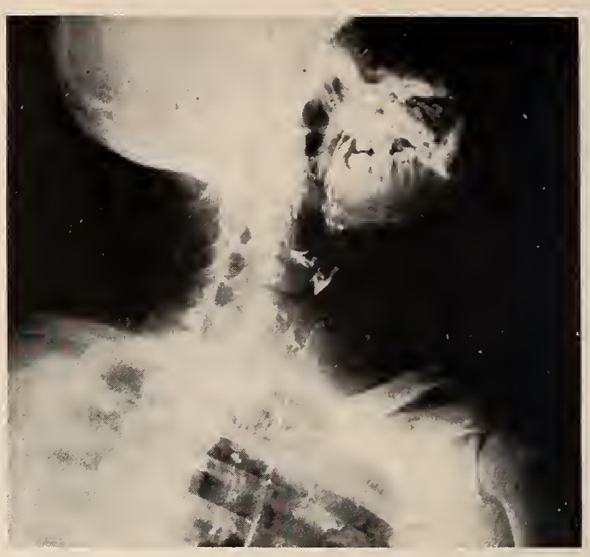

Figure 1.—Lipiodol® outline of the trachea after removal of intratracheal plastic tube, which had been in place about four and one-half months.

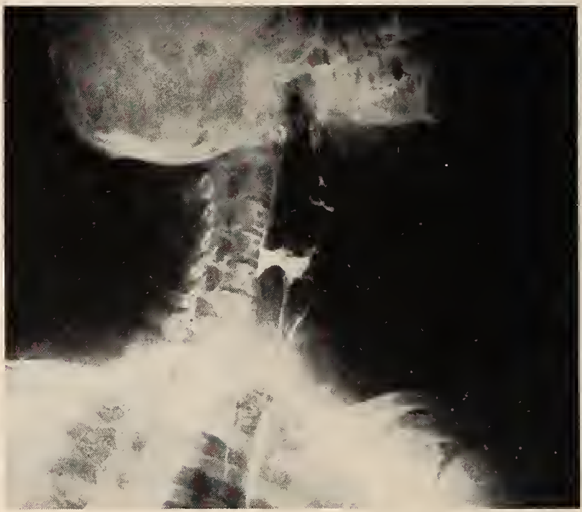

Figure 2.—Outline of trachea two months after removal of intratracheal plastic tube. The lumen was reduced to 7 mm. at the narrowest part.

Two months later the trachea was again outlined with Lipiodol® and a similar oblique x-ray film was made. The tracheal lumen was reduced from 11 mm. to 7 mm. at the narrowest point (Figure 2).

Although the patient had no symptoms of respiratory obstruction, significant wheeze was noted when he was in certain positions, most notably when he leaned forward, and it appeared that further measures would be necessary to maintain an adequate airway.

On June 11, 1951, a No. 9H Portex tube, thicker walled than the one previously used but of the same outside diameter and length, was prepared as before except that, for purposes of fixation, .026 tantalum wire was inserted through the posterior wall 3.5 cm. from the top of the tube. The two ends of the wire were brought around the sides of the tube and twisted together snugly on the outside of the anterior wall. The tube was inserted in the trachea (Figure

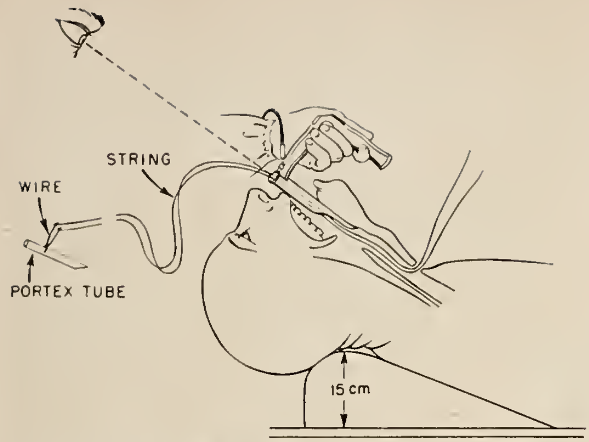

Figure 3.—Method of introduction of plastic tube into the trachea. The block under the back of the head and shoulders kept the trachea straight.

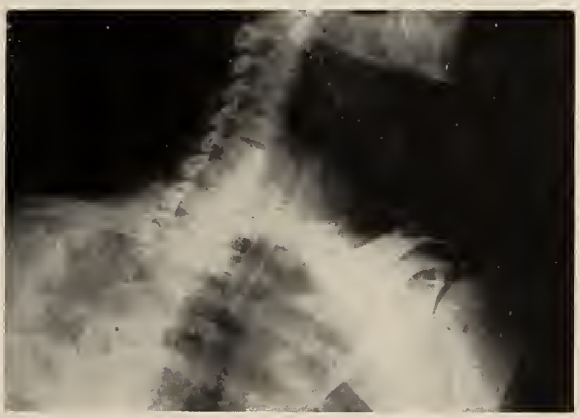

Figure 4.—Intratracheal tube held in place by tantalum wire.

3) and the ends of the wire were brought through the anterior wall of the trachea and anchored to a short piece of tubing on the surface of the neck.

Paroxysmal coughing occurred after the new tube was in place. Indirect examination indicated that it was caused by irritation of the subglottal area by the upper end of the tube. The supporting wire was readjusted, but the tube did not settle sufficiently to correct the situation. After three days it was removed, shortened by 6 mm. at the upper end so that it would not traumatize the inferior aspects of the true vocal cords, and reinserted (Figure 4). It was not removed again until nine months later, and the patient reported that in the interim it had caused no discomfort.

DISCUSSION

Methods of fixing or supporting the intratracheal tube by stiff wires passed through the lower portion of the thyroid cartilage and then cut short beneath the skin[1] were considered. Inasmuch as both the true vocal cords were uninjured and the nerve supply was functioning, it was deemed inadvisable to risk further surgical trauma upon the thyroid cartilage. Further, it was felt that passing a very sharp straight needle through the plastic tubing required so much force that considerable intralaryngeal damage might be done.

The use of intratracheal split thickness skin grafts[1] to the traumatized area was considered. However, as the extent of the injury was so ill defined at first,[3] and as the patient was tolerating the plastic tube so well, it seemed advisable not to interfere with whatever spontaneous regeneration of respiratory epithelium and tracheal cartilage might take place.[2] Now that the tube has been removed, how much the tracheal lumen will be reduced from contraction of the fibrous tissue will depend to some extent upon the opposing spring of the tracheal cartilages. Future observation will be necessary.

SUMMARY

A soldier received a wound in the trachea that caused complete stenosis and speechlessness. A plastic tube placed in the trachea was well tolerated for long periods providing the tube did not touch the inferior aspects of the true vocal cords, and with the tube in place the patient could talk.

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California MEDICINE

EDITORIAL

The Dean Steps Down

PUBLIC ANNOUNCEMENT that Dr. Loren R. Chandler has asked to be relieved of his duties as dean of Stanford University School of Medicine came as a surprise to many Californians, physicians and laymen alike. Dr. Chandler had asked the trustees of the university earlier in the year to permit him to give up his dean's post just as soon as a suitable replacement could be found. While this fact was known to some people, the university announced only in late October that this post was about to undergo a change.

"Yank," as his friends know him, doesn't want to leave Stanford or his surgical teaching. He has asked to be continued as professor of surgery and he intends to continue teaching and to enlarge his private medical practice. What he does want is to be relieved of the administrative duties of the dean's office.

In stepping down from the dean's chair, Dr. Chandler will leave behind a significant record of achievement. In the twenty years of his administration, Stanford has continued to follow the illustrious path laid out in earlier years. Its faculty has been recruited from among the younger generation of scientists, a policy which Dr. Chandler continued as a means of keeping the medical school young in its thinking as well as its teaching. Culmination of this policy came recently, when a Stanford faculty member was awarded the Nobel Prize in physics.

In addition to furnishing a forward-looking administration to the medical school, "Yank" Chandler has taken an active part in medical educational affairs throughout the country. He has given unstintingly of his time and talents in the Association of American Medical Colleges of which he has been president as a means of improving medical education on a nationwide basis. He has played a significant role in developing answers to the extremely complex problems relating to medical education and military and civilian medical practice during World War II and in the postwar period. He has fostered the autonomy of admissions committees in selecting students for the medical school and has strongly promoted bedside teaching and real scientific research. Pseudoresearch for selfish purposes and one-shot projects without continuing value have been pushed aside in favor of true inquiries leading to actual medical advancement. Dr. Chandler's program has been exciting as well as educationally advantageous.

In medical association affairs, which are sometimes beyond the scope of educators, Dr. Chandler has proved his value for many years. He has served as a member of the House of Delegates of the California Medical Association on many occasions and in that body has been recognized as a symbol of strength and integrity. In opposing antivivisection legislation before committees of the Senate and Assembly he has repeatedly been the most effective spokesman for the California Medical Association and for the universities and medical schools of the state. When the Association formed a special committee in 1945-46 to look into California Physicians'

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For information on preparation of manuscript, see advertising page 2

Service and other medical prepayment plans, "Yank" Chandler was selected as one physician whose integrity was above reproach as chairman of that important group. The committee, promptly dubbed the "Chandler Committee," is still known by that name.

In working on the problems before the special committee, Dr. Chandler brought forward the same attributes which he has constantly displayed as a medical dean. He insisted on truth, clarity, thoroughness and objectivity. His committee interviewed literally hundreds of experts, seeking opinions and philosophies. It called on physicians, businessmen, labor representatives, hospital and medical plan administrators and numerous others who could be expected to contribute to a broad review of a vital subject. The results of this inquiry were condensed into the committee's final report, which was accepted by the House of Delegates as a complete, accurate and up-to-the-minute finding in a field currently under political as well as public pressure.

As an educator, Dr. Chandler has established himself in a preeminent position of national significance. As a teacher of surgery he has impressed his own skill and knowledge on numerous students who are making their own marks today. He has impressed on a number of generations of young physicians in California the need for active participation in the California Medical Association and community affairs. As a surgeon he has demonstrated great ability particularly in the field of pediatric surgery in which he has had great interest. As an Association member, he has set a high standard of integrity, thoroughness and capacity which is seldom matched in medical organizations. As a man he has become much loved and everywhere respected and admired.

Stanford has a large pair of shoes to fill in replacing "Yank" Chandler. Medical practice and the public will gain from the medical school's loss in securing a greater share of his time and capacity. The medical profession welcomes into the ranks of active practitioners this surgeon who has so distinguished himself in allied fields.

LETTERS to the Editor . . .

Editor, CALIFORNIA MEDICINE:

You may be interested in the enclosed opinion of the U. S. Court of Appeals for the Fifth Circuit in the case of U. S. vs. Hoxsey Cancer Clinic, a Partnership, and Harry M. Hoxsey, an Individual. This opinion is the result of an appeal in a vigorously contested case tried in the U. S. District Court at Dallas, Texas. It reverses the judgment of the trial Judge (William H. Atwell, N. Dist. of Texas) and directs that court to issue an injunction prohibiting the defendants from distributing in interstate commerce brownish-black, and pink, liquids intended for the treatment of cancer in man.

In many parts of the country, people are taking the Hoxsey medicines in the belief that they may be an effective treatment for cancer. Friends and relatives of cancer victims frequently query local physicians concerning this treatment. You may wish to publish information about this case so that physicians will have the facts at hand concerning these drugs, in the event of such inquiries.

The following important principles are laid down in the Circuit Court opinion, based on testimony by cancer experts.

1. ". . . there is only one reliable and accurate means of determining whether what is thought to be cancer is, in truth and fact, actually cancer. This requires a biopsy, a microscopic examination of a piece of tissue removed from the infected and diseased region."

2. ". . . the opinion of a layman as to whether he has, or had, cancer, or a like opinion as to whether he has been cured and no longer bears the disease, if, in fact, it ever actually existed, is entitled to little, if any, weight."

3. ". . . despite the vast and continuous research which has been conducted into the cause of, and possible cure for, cancer the aggregate of medical experience and qualified experts recognize in the treatment of internal cancer only the methods of surgery, x-ray, radium and some of the radioactive by-products of atomic bomb production."

4. ". . . Upon such subjects a court should not be so blind and deaf as to fail to see, hear and understand the import and effect of such matters of general public knowledge and acceptance, especially where they are established by the overwhelming weight of disinterested testimony . . ."

The Hoxsey Clinic is located in Dallas, Texas, and ships its drugs to patients in many other states. According to the unanimous opinion of the Court of Appeals, consisting of Judges Russell, Hutcheson, and Rives, "the overwhelming weight of the credible evidence requires a conclusion that the representation that the Hoxsey liquid medicines are efficacious in the cure of cancer is . . . false and misleading. The evidence as a whole does not support the finding of the trial court that 'some it cures, and some it does not cure, and some it relieves somewhat'."

Under the law the defendants still have the right to petition for review by the U. S. Supreme Court.

C. W. CRAWFORD, *Commissioner of Food and Drugs*

California MEDICAL ASSOCIATION

NOTICES & REPORTS

The Practice of Medicine Under the Workmen's Compensation Act

An historical review of the entire problem of medical care rendered under the Workmen's Compensation laws of California is presented primarily to inform the medical profession of the position in which it has been placed during the past 25 years.

Before the days of compulsory workmen's compensation insurance, industrial accident cases were frequently charity cases because workers were poorly paid, their earnings stopped when they were injured and their savings were rapidly depleted. Following adoption of compulsory industrial accident insurance by the State Legislature, the problem of administering medical care to the industrial worker fell into the hands of insurance companies. The original fee schedule set up at that time was established on the basis that medical care was being rendered to relatively indigent people and that, therefore, the basic fee paid for that medical service should be scaled down accordingly.

The California Industrial Accident fee schedule prepared by "The Committee of the Council of the Medical Society of the State of California," some 34 years ago, carried the following statement on its first page: "The schedule here presented is designed for use in connection with medical services rendered an individual with an average earning capacity of $1250.00 per annum. To this class belongs the average individual which the workmen's compensation insurance and safety act is intended to cure and relieve." In bold-faced type, preceding the paragraph just quoted, the following note appeared: *"These fees represent a minimum! Fees higher than schedule will be allowed when warranted by unusual difficulties or requiring an unusual amount of time."*

Since the original fee schedule preparation, the total economic pattern of living among employees of industry has changed radically. By no stretch of the imagination can a working man in this day and age be termed indigent. In actual fact, industry itself is responsible for the care of the working man under the State Compensation Insurance laws of the State of California. The worker has absolutely nothing to do with any payment for any medical service rendered under those laws. As the years have gone by, the scope and intent of the workmen's compensation law has been expanded to include a great deal more than actual medical services designed to care for or render medical care to an injured workman. Medical diseases aggravated by work in industry account today for a much larger portion of the medical care rendered under these laws than they did 25 years ago. Heart disease, tuberculosis, and pneumonoconiosis are but three of the common medical problems that are frequently considered to be covered by workmen's compensation in the present day.

The medical profession over this period of years has been utilized by the insurance carriers and the Industrial Accident Commission to do a great deal more than render medical care alone. As the years went by, the idea was fostered that if a workman was injured and had a permanent disability as the result of that injury, then that workman was entitled to compensation in terms of dollars for the degree of disability. The medical profession was utilized to describe and evaluate the permanent disability in individual cases. By the very nature of the problem in any given individual case, there is bound to be and always will be a wide divergence of opinion in expressing the degree of permanent disability that may exist. In order to protect the individual working man the Industrial Accident Commission, through its system of referees, has set up a quasi-judicial body which acts more or less in the manner of a civil court. For years, the insurance carriers were represented by lawyers to present their side of the problem to the referee before the Industrial Accident Commission. In more recent years, a group of plaintiff attorneys has been developed to present the workman's side before the Industrial Accident Commission. Again the services of doctors have been demanded and received in presenting these two basically conflicting opinions to the Industrial Accident Commission.

The actual cost, therefore, of rendering medical care or surgical care to an injured or diseased workman is and must be greater when it is rendered under workmen's compensation laws than it would be if that same care were furnished to a patient as an individual without the legal implications referred to.

Over a period of years there have been certain revisions in the industrial fee schedule and there has been an expansion of the schedule in its size. Up until 1946, any and all revisions of the fee schedule were made after formal hearings before the Industrial Accident Commission and by action of the Industrial Accident Commission itself. As these revisions were made, however, the original basic premise that the medical care was being furnished to an indigent group of people has never changed despite the expansion of workmen's compensation coverage and the changes in the economic pattern of living throughout the United States and more particularly in the State of California.

In 1946, the Industrial Accident Commission was prepared to make an upward revision of the fee schedule to compensate for an increase in the cost of living index up until that point. A major rift developed between the medical profession, the insurance carriers and the Industrial Accident Commission at that time, not because of any divergence of opinion regarding the need for an increase in medical fees, but simply because some segments of the medical profession felt at that time that a basic revision in the terminology of the schedule and expansion of the schedule to cover the many divergent and varied procedures that have become industrial in nature should be made. These changes were made necessary by virtue of the expansion of the complexity and completeness of coverage that the present day interpretation of workman's compensation law demands.

Unfortunately, in open hearing, a considerable amount of disagreement developed not only between members of the Commission but also members of the insurance carriers and individual segments of the California Medical Association. It was finally decided by the Industrial Accident Commission itself that from a technical legal viewpoint it had no power to adjudicate any dispute of this sort. The result of this decision was a state of chaos.

The California Medical Association was left in an extremely difficult situation in which its only recourse as a group was to refer the problem to the individual members of the association to try to force some sort of agreement with respect to a fee schedule between the various insurance carriers and the individual members with the Industrial Accident Commission as an entity in an awkward position where the commission assumed no responsibility for adjudication of a fee schedule and yet was required to decide upon the propriety of any individual fee that might have been charged for the care in an individual case. This period was extremely trying to the Industrial Accident Commission, but actually almost as trying to the individual members of the medical profession who were taking care of workmen compensation problems during the interval. Each individual physician was required to present his individual problem and the referee of the Commission had to hear all of them. The insurance carriers, on the other hand, were represented by legal counsel to handle cases in volume.

Finally, after a great deal of recrimination, the adjusted fee schedule was agreed upon late in 1949, submitted to the Industrial Accident Commission, and approved; and that schedule has been in effect since February 8, 1950.

One of the prime agreements of that schedule was to the effect that the schedule should be revised, to mutual advantage of the parties concerned, the insurance carriers and the medical profession, at least every two years.

An industrial fee schedule committee was appointed by the California Medical Association in May, 1950, to meet with the insurance carriers. This the committee has done from time to time during the past two and one-half years. There is still no agreement between the two groups.

The medical profession has met its obligation honestly and fairly. The committee appointed by the medical association contains representatives from each of the individual specialty groups, from each of the geographical areas of the state and an adequate representation of the preponderant general practitioner group.

In an effort to build up a better relationship with the insurance group, the first year of negotiation with the insurance group was spent in listening to the criticism directed toward the medical profession by the insurance carriers, trying to adjust those criticisms and, if possible, eliminate them. During that first year a great deal of time was spent attempting to standardize the various reports demanded by the workmen's compensation laws and to simplify the problem for the doctor and to standardize the information needed by the insurance people to process each individual claim.

The original medical report was accepted as standard; the supplemental report was standardized; a weekly compensation order card was formulated and the final report bill was standardized. The actual preparation and publication of these various forms was done by the insurance negotiating committee and its individual members. When these forms were finally presented to the industrial fee schedule committee, members of the medical association were of the distinct impression that a major step forward had been accomplished and that these forms would be universally adopted and furnished by the insurance people when the stock of old forms then on hand was depleted.

It was on this assumption that the California Medical Association disseminated samples of these forms to all members of the California Medical Association, informing them that this forward step was an accomplished fact. The schedule committee of the California Medical Association was quite pleased that it had taken a part in simplifying the problem of rendering reports to insurance carriers regarding individual cases. They felt that one of the major problems for the insurance carriers and one of the major sources of irritation to the individual physician had been eliminated.

To date, so far as the fee schedule committee is aware, none of these forms has been made available by any insurance carrier and although the California Medical Association fee schedule committee sent what it believed to be correct information to each of the individual doctors of the state, the committee now finds that the insurance industry would be very happy to receive these forms if the individual physician would purchase them for his own use.

During the two and one-half years of negotiation with representatives of the insurance carriers, there has been an abundant amount of criticism directed toward the medical profession. There have been charges of misuse of the schedule, mainly in the form of excess charges. Some of these complaints were justified, but even the insurance carriers would admit that at least 95 per cent of the doctors were honest and upright and, in actual fact, that only a small portion of the profession was responsible for the abuses which exist. During the past two and one-half years, the California Medical Association has tried its best to cooperate completely with the insurance carriers in eliminating this problem and has shown quite good faith toward the insurance people in responding to their criticism along this line.

At no time during the two and one-half years has there been any direct negotiation between the representatives of the insurance industry and the doctors with regard to the formulation of a specific revision of a fee schedule. Finally, therefore, the fee schedule committee of the California Medical Association set about to formulate a realistic schedule of its own. An early basic decision was made to engage the services of an economic consultant to study the broad problem of a fee schedule and to make recommendations to the committee based entirely on a purely economic survey to use as a basis for estimation of what the individual fees should be in that proposed schedule. A fund was allocated by the Council of the California Medical Association to the fee schedule committee. With those funds, the schedule committee engaged the services of Mr. Stuart Walsh of San Francisco, Director of the Industrial Survey Associates of San Francisco, and he has remained to present date the economic advisor of the fee schedule committee.

Based on his recommendations and, after a very extended consultation with all elements of the California Medical Association, a fee schedule was actually formulated. Copies of this schedule were sent to each county medical society in the state. In addition, copies of the schedule were sent to each of the various specialty groups and their respective societies throughout the state for study and approval. When all of the replies were received from these various segments of the California Medical Association, the final adjustment of the schedule was made and it was approved by the Council of the California Medical Association in May, 1952. Your fee schedule committee believes that the fee schedule produced is realistic and fair to all members of the medical profession and that it is economically sound and fair to the insurance profession.

It might be well at this point to emphasize that the problem we are discussing at this time relates entirely and solely to fees paid to doctors for rendering care to injured and diseased workmen under the workmen's compensation law. Doctors are the first to realize that there has been a tremendous increase in cost of hospitalization; that drugs and supplies have increased in cost during the past ten years and that many other factors exist to increase the cost of medical care in the overall sense. It is unfair, however, to accuse the doctors of being responsible for the increase in medical costs which have developed. Increase in medical costs has been brought about by increasing economic pressure and not by arbitrary increase in medical fees. The two things are totally divergent and completely separate one from the other.

The fee schedule committee did not believe that it was any longer proper for the medical profession to continue to subsidize the various insurance car-

riers writing workmen's compensation in the State of California indefinitely. These companies have asked for and received proper premium increase to cover increases in acquisition and operating costs during the past 25 years, and the medical profession has not been served in a similar fashion.

This picture is adequately and complete demonstrated in the accompanying chart.

The only increase in medical fees during the post-war period has been a 12.5 per cent increase upon the adoption of the revised fee schedule in February, 1950. The proposed new schedule prepared by the medical profession will have the effect of increasing gross payments to doctors by approximately 36 per cent. This figure is a gross figure, however. The cost to the doctor of operating his practice has increased rapidly also, so that in effect, the net increase to a doctor's income from this source would be only approximately 20 per cent before income taxes are paid. The approximate rate increase necessary to meet this increased schedule would be small—not more than 8.125 per cent.

It is interesting to apply these figures to an individual practitioner doing general practice. If 25 per cent of his practice is devoted to industrial cases, assuming a net income of ten thousand dollars, then seventy-five hundred dollars would be derived from general practice and twenty-five hundred dollars from industrial practice. Add six hundred and twenty-five dollars from a 20 per cent increase in medical fees and the new net income would be ten thousand, six hundred twenty-five dollars. The actual net increase to that practitioner would be 6.25 per cent. Let us assume that the average doctor who devotes 20 to 25 per cent of his practice to industrial cases would, therefore, under the new schedule, receive an increase of between four and six per cent in his net income. This is not unreasonable considering the general increase in the cost of living in the state.

There are some essential facts that must be taken into consideration from an overall economic viewpoint to substantiate and justify a request for total revision of thinking in the composition and structure of a fee schedule to cover medical care under the workmen's compensation law.

From March, 1946, to March, 1950, the nationwide increase in the cost of living, according to the consumer price index, was 14.2 per cent. In the same period the rise in average weekly earnings of industrial workers in the State of California, according to the division of labor statistics, was 20.6 per cent. From February, 1950, to March, 1951, according to the consumer price index, the cost of living showed a further increase over the 1946 figure of 27.5 per cent while the average weekly earnings of California industrial workers showed a further increase of 21.4 per cent. *As of June, 1952, the average of weekly earnings was $76.43, a record.*

Considering the total period from 1946 to present date, the consumer price index and average earnings of industrial workers have both increased well over 40 per cent while medical fee schedules, according to the California Inspection Rating Bureau, have increased only 12.5 per cent. It thus appears that the fee schedule published in February, 1950, does not represent an increase equivalent to the increase in comparable factors which should be taken into consideration.

Some further essential facts are pertinent:

Per Capita Income—1951*

California	$1,933
United States average	1,647

17.6% higher in California

* U. S. Department of Commerce.

Physicians' Income (arithmetic average)†

	Gross	Net	Per Cent Net to Gross
United States	$19,710	$11,744	59.6
California	25,781	14,353	55.6

† U. S. Department of Commerce (Survey 1949).

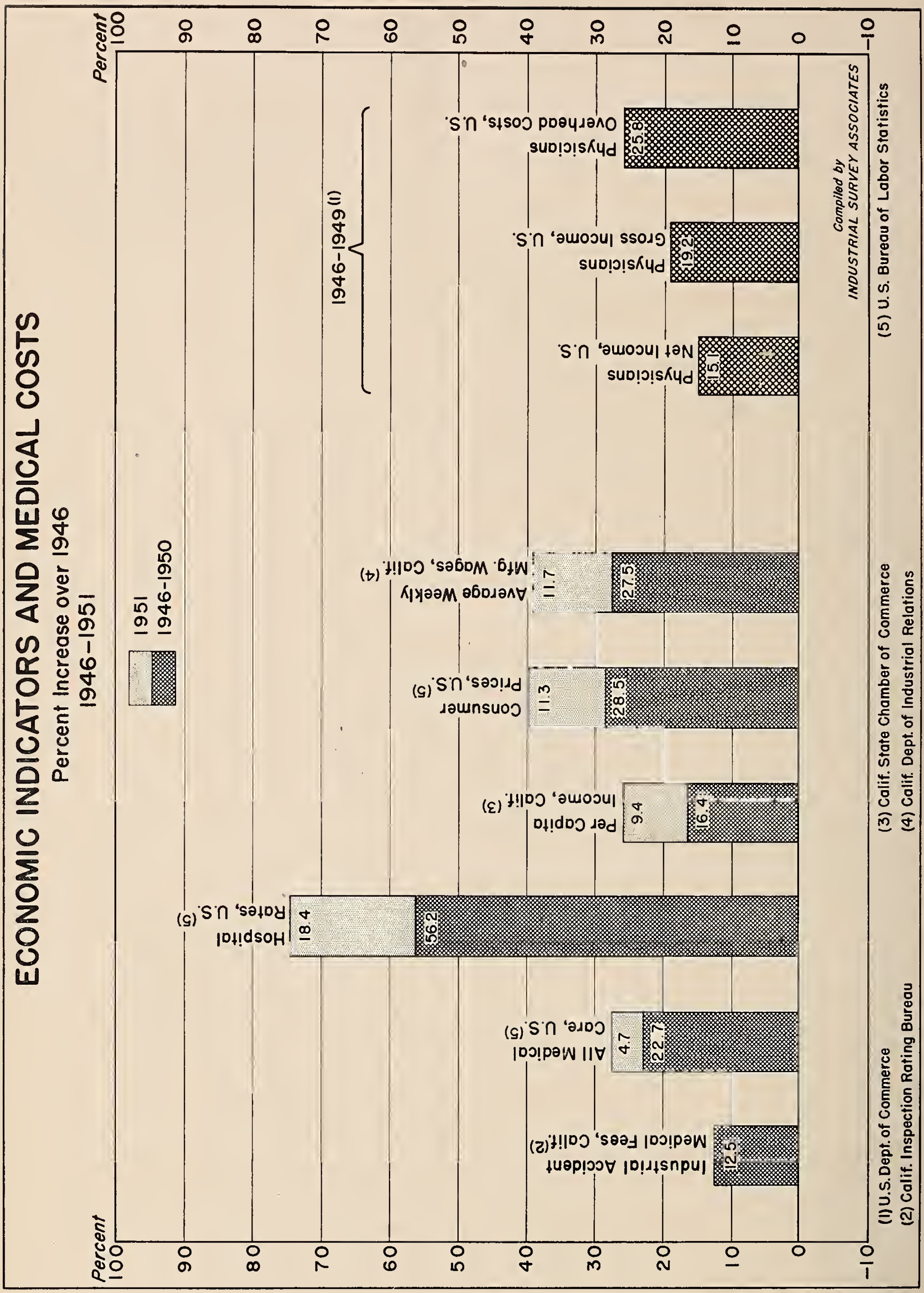
Cost of Living Index (all items)

January 1941	100.8
January 1945	127.1
January 1946	129.9
January 1947	153.3
January 1948	168.8
January 1949	170.9
January 1950	166.9
January 1951	181.6
January 1952	190.2
June 1952	191.1
July 1952	192.4

Proposed Fee Schedule

Gross increase to doctors	36%
Net increase to doctors	20%

The position of the medical profession in this whole picture is a peculiar one. Since 1914 it has continued to serve the injured workmen under the workmen's compensation laws in the State of California under a fee schedule which has been controlled continuously since its inception by periodic revision through the Industrial Accident Commission. Revision of that original fee schedule did not keep pace with the changing economic picture in the State of California. In 1949 the Industrial Accident Commission reversed its position and denied that it any longer had any right to set or adopt a medical fee schedule. Since the adoption of the 1950 schedule, the medical profession has found it necessary to negotiate solely and exclusively with the insurance carriers through a committee of five members appointed by the 117 individual companies writ-



ECONOMIC INDICATORS AND MEDICAL COSTS

Percent Increase over 1946

1946–1951

Compiled by INDUSTRIAL SURVEY ASSOCIATES

(1) U.S. Dept. of Commerce
(2) Calif. Inspection Rating Bureau
(3) Calif. State Chamber of Commerce
(4) Calif. Dept. of Industrial Relations
(5) U.S. Bureau of Labor Statistics

ing insurance of this type in the State of California. These five insurance representatives are a negotiating team without authority to make any decisions on their own, and any decision they reach must be referred back to a larger overall committee of the insurance carriers for final decision.

The insurance companies' attitude for many years was to the effect that no increase in medical fees of any appreciable amount could be granted because of the fact that they had to show a loss experience ratio for a period of three years before any revision in their premium rate could be made to accommodate for the losses that had been incurred during that three-year period. This might have been a legitimate complaint in the past, but it no longer exists because recent legislative action on the part of the State of California has changed the laws to allow the insurance commissioner to grant an increase in rate of premium where proper cause can be established and shown. The insurance companies writing workmen's compensation were recently granted a substantial increase in their premium rate as late as July, 1952. They have been faced with increasing costs and have been granted a rate increase to accommodate for that loss. They asked for an increase of 10.6 per cent, and the increase granted was, so far as can be determined, 8.1 per cent.

In order for the proposed fee schedule prepared by the medical profession to become an accomplished fact in the present situation, it must be, first of all, accepted completely by the insurance carriers. Secondly the schedule, with the approval of the medical profession and the insurance carriers, must then be presented to the Industrial Accident Commission for its review and approval. If it is then approved by the Industrial Accident Commission, the entire schedule must then be turned back to the insurance industry for review by the California Inspection Rating Bureau which would recommend the exact rate in premium increase necessary to accommodate for the increased cost of the new schedule.

In this total picture, the medical profession continues to be attacked from many sides, mainly on the grounds that it is responsible for the entire increase in the medical services cost.

It might be wise to consider what the medical service cost actually is. It may be arbitrarily divided as follows: 1. Actual medical services rendered. 2. Drugs and supplies. 3. Hospital costs. 4. Rehabilitation services. 5. Permanent disability cost.

The only one phase of this picture in which the medical profession is concerned at the moment is the cost of medical services rendered. The remaining factors are not directly and solely a problem of the medical profession, although they are matters of interest to physicians because they concern the welfare of the patient as an individual and the good of society in general.

The medical profession feels that the working man is entitled to choose his own physician and although the large industrial clinics serve a good purpose in many instances, we do not believe that they can, now or in the future, replace the services of the individual doctor in caring for the individual patient.

The medical association turned over the new proposed fee schedule prepared by its committee to the insurance carriers in April, 1952. On August 20, 1952, the insurance carriers made their first definitive proposal. Their suggestion at that time was that the new schedule should be discarded completely. It was their suggestion that we should return to the old 1950 schedule as a basis, keep it in its entirety and increase it by a surcharge of 10 per cent over all on each item. They further made the provision that the suggested 10 per cent increase would not become effective until such time as the application of the premium rate increase became effective following review by the Insurance Commissioner of the State of California. They made the further provision that pay for care for a patient who was under treatment before the 10 per cent increase went into effect was to be continued at the old rate for one year. At the expiration of one year, any case under treatment would then be paid for on the new basis.

What can the doctors do about this problem in the State of California? They must, first of all, continue to serve the ill or injured workman because, after all, that is the very reason for being of each individual doctor practicing medicine in the State of California. If doctors took a unified stand and continued to support the final decision of the medical association, no problem would exist at all. It seems odd that the medical profession continues to permit a group whose chief interest, certainly, is not that of adequate payments to physicians to establish the fees under which medical services shall be rendered.

The time is rapidly approaching when some extremely vital and final decisions on the part of the medical profession in general must be made. This review of our difficult position regarding the industrial fee schedule is presented to each member of the medical profession so that he as an individual may understand the basic problems involved and in the hope that he will comprehend the implications which exist regarding his future and the future of his colleagues practicing medicine and surgery not only in the field of workmen's compensation, but also in the much broader field of health and accident insurance which is developing so rapidly in the present economy of the United States and particularly in the State of California. We believe that doctors, no less than architects, cabinet makers and carpenters, are worthy of their individual hire. By his very nature, a doctor must continue to remain an individual thinking person who in the course of his training and thinking during a lifetime must make his own decisions and perform definitively upon these decisions. In the present problem, however, it might be well for individual doctors to deviate from habit a bit and act collectively.

CONCLUSIONS

It would seem from the information in the preceding paragraphs that it has not proven feasible or practical for the medical profession to rely entirely on direct negotiations with the insurance industry. The pattern of failure has existed for 34 years and longer and will continue until such time as the medical profession is placed in a better bargaining position.

The dilemma exists as to just how this change is to be accomplished. There are two suggestions:

1. That legislation be proposed which will allow the medical profession to take an active part in establishing, enforcing and as need arises adjusting a schedule of medical fees under which medicine shall practice in the field of industrial injuries.

2. To publish the existing schedule as is, issue it to the doctors of the state with the recommendation that they place it into effect after a reasonable time interval. This latter move is perhaps difficult but it would be fair in the sense that it would allow the insurance industry time to make any adjustments in premium rate that would be necessary to pay for the increased cost.

Francis J. Cox, M.D.

Chairman, Committee on Industrial Accident Commission of the California Medical Association

REFERENCES

1. Income of Physicians, William Weinfeld, Survey of Current Business, United States Department of Commerce.

2. Indicated Increase in Medical Costs Due to Increase in Fee Schedule, Exhibit J, California Inspection Rating Bureau, August 18, 1950.

3. Income Payments to Individuals in California, National Income Division, Office of Business Economics, U. S. Department of Commerce. Per capita estimates for California calculated by the California State Chamber of Commerce.

4. Average Weekly Earnings, Manufacturing Production Workers—1939-1951, California Department of Industrial Relations, Division of Labor Statistics and Research.

5. Consumers' Price Index for Moderate Income Families in the United States, U. S. Department of Labor, Bureau of Labor Statistics.

Executive Committee Minutes

Tentative Draft: Minutes of the 234th Meeting of the Executive Committee, Los Angeles, October 19, 1952.

The meeting was called to order by Chairman Lum in Conference Room No. 6 of the Biltmore Hotel, Los Angeles, at 10:00 a.m., Sunday, October 19, 1952.

Roll Call:

Present were President Alesen, President-elect Green, Speaker Charnock, Auditing Committee Chairman Lum, Secretary Daniels and Editor Wilbur. Absent for cause, Council Chairman Shipman. A quorum present and acting.

Present by invitation were Executive Secretary Hunton, Legal Counsel Hassard, Public Relations Director Clancy, Mr. Ben H. Read, Doctors James Doyle and Peter Blong, representing the legislative committee; Doctors J. Martin Askey, Lewis T. Bullock and E. E. McNeil, representing the special committee on psychology, and Drs. Dorcus, Tollman, Swart, Perkins and Rankin, representing the psychologists.

1. *Blood Bank Commission:*

On motion duly made and seconded, it was voted to request the Chairman of the Blood Bank Commission and others to be selected by him to meet with Red Cross officials in Washington on November 23 to discuss cooperation in operating blood banks in California.

On motion duly made and seconded, it was voted to appoint Doctors Owen F. Thomas of Santa Rosa and David Singman of Berkeley as members of the Blood Bank Commission.

2. *Disciplinary Hearing:*

Mr. Hassard discussed a plan for holding an appeal hearing before the Council on November 15, 1952, in a disciplinary case arising in Alameda-Contra Costa County. On motion duly made and seconded, it was voted to appoint President-elect Green as a conciliation committee of one to attempt a conciliation prior to the appeals hearing. It was also voted that the appeal be heard from 10 a.m. to 12 noon on November 15, 1952, with one hour allotted to each side.

3. *State Bar of California—Adoption Procedures:*

On motion duly made and seconded, it was voted to accept an invitation from the State Bar of California to appoint three physicians as members of a joint committee representing the State Bar, the C.M.A. and the State Department of Social Welfare to consider existing independent adoption procedures. Dr. Donald Tollefson of Los Angeles was named chairman of this group, with authority to name two additional members. (Doctor Tollefson later named Doctors Bernard J. Hanley of Los Angeles and James V. Campbell of Oakland as the other members.)

4. *Committee on Scientific Work:*

Doctor Daniels presented a proposed new schedule for the 1953 Annual Session, outlining meetings of the House of Delegates on the first and fourth days of the meeting, no C.M.A. scientific meetings conflicting with the meetings of the House of Delegates, and with an overall schedule of five days, rather than the four days heretofore used. On motion duly made and seconded, this proposed schedule was approved.

On motion duly made and seconded, Doctor M. George Henry of Los Angeles was named Chairman of the Committee on Local Arrangements and was authorized to select his own assistants.

5. *Committee on Psychology:*

Doctors Bullock, Askey, McNeil, Blong and Doyle discussed the proposed legislation to provide for licensure of clinical psychologists and Doctors Dorcus, Tollman, Swart, Perkins and Rankin discussed this matter from the psychologists' point of view.

On motion duly made and seconded, it was voted to request the Committee on Public Policy and Legislation to work closely with Doctor Bullock's committee on this legislative proposal.

On motion duly made and seconded, it was voted to notify the psychologists that the Council had previously approved Doctor Bullock's report and had gone on record in favor of introducing suitable legislation. Also, that it has under study a working draft of a proposed legislative bill embodying the proposals of Doctor Bullock's committee and the psychologists.

On motion duly made and seconded, Doctor James Doyle was named acting sub-chairman of the Committee on Public Policy and Legislation and was authorized to proceed in contacting psychologists and Doctor Bullock's committee.

6. *Special Committee on Psychiatry:*

A report from Doctor Cullen Ward Irish and associates on the Special Committee on Psychiatry was reviewed and ordered forwarded to the Legislative Auditor in Sacramento. On motion duly made and seconded, this report was accepted for transmittal and the thanks of the committee voted to Doctor Irish and his associates for an excellent report.

7. *Association Office Quarters:*

Mr. Hunton reported that additional office space will soon be available adjoining the present office, in a size sufficient to meet current and immediately foreseeable needs. This space will call for an increased rental of approximately $2,500 annually and will cost an estimated $4,000-$5,000 to rebuild for office requirements. On motion duly made and seconded, the acquisition of this space and the expenditure of not more than $5,000 for remodeling were approved, subject to approval by the Council of the financial needs involved.

8. *State Department of Education:*

A request from the State Department of Education to appoint Doctor Alfred G. Allen of Sacramento as a representative on a committee to study the physical standards required for granting teachers' credentials was received. On motion duly made and seconded, it was voted to name Doctor Allen to this committee, subject to approval of this appointment by the Sacramento Society for Medical Improvement.

9. CALIFORNIA MEDICINE:

Doctor Wilbur discussed proposals which have been advanced for CALIFORNIA MEDICINE to assume a larger role in participating in and reporting on economic and other factors affecting the practice of medicine. This would include additional reporting on committee activities and on existing situations bearing on medical practice. It was agreed that this matter should be discussed before the Council, especially since it might involve additional costs.

10. *Legal Department:*

Mr. Hassard discussed the possibility of establishing judicial councils in the larger county societies, these councils to be divorced from the official bodies of the society and to serve as judicial bodies for the hearing of complaints and disciplinary actions.

Mr. Hassard also discussed the proposed establishment of emergency medical services in hospitals where public hospitals are not available. Such emergency service would involve a rotating panel of participating physicians, with the hospital agreeing to guarantee a minimum compensation, and to collect the physician's fee for him and to pay to him any excess collections over the minimum guarantee.

It was agreed to discuss both these items at the next Council meeting.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:00 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary.*

In Memoriam

Canby, Charles B. Died in Van Nuys, September 25, 1952, aged 78, of coronary occlusion. Graduate of the College of Physicians and Surgeons of Baltimore, Maryland, 1897. Licensed in California in 1917. Doctor Canby was a retired member of the Los Angeles County Medical Association, and the California Medical Association.

✣

Christensen, Arthur C. Died in Grass Valley, October 18, 1952, aged 63. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1923. Licensed in California in 1923. Doctor Christensen was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Clark, Leslie J. Died in Hemet, October 9, 1952, aged 54, of coronary artery disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1923. Licensed in California in 1923. Dr. Clark was a member of the Riverside County Medical Association, the California Medical Association, and the American Medical Association.

✣

Cohn, Allan L. Died in San Francisco, October 4, 1952, aged 61, of myocardial infarction. Graduate of the University of California Medical School, Berkeley-San Francisco, 1917. Licensed in California in 1917. Doctor Cohn was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

Denton, William L. Died in Pasadena, September 26, 1952, aged 65. Graduate of Northwestern University Medical School, Chicago, 1914. Licensed in California in 1915. Doctor Denton was a member of the Inyo-Mono County Medical Society, the California Medical Association, and the American Medical Association.

✣

Edmonds, Frank W. Died in Oakland, September 5, 1952, aged 81, of myelophthisic anemia. Graduate of Cooper Medical College, San Francisco, 1905. Licensed in California in 1905. Doctor Edmonds was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✣

Engle, Howard M. Died in San Francisco, October 6, 1952, aged 74. Graduate of Hahnemann Medical College and Hospital of Philadelphia, Pennsylvania, 1896. Licensed in California in 1897. Doctor Engle was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

Randall, Dwight T. Died in Santa Monica, October 9, 1952, aged 48. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1929. Licensed in California in 1929. Doctor Randall was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Rubin, Herman W. Died in New York City, October 13, 1952, aged 64, of a cerebral hemorrhage. Graduate of Long Island College of Medicine, Brooklyn, New York, 1910. Licensed in California in 1944. Doctor Rubin was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Speer, Grant G. Died in Los Angeles, October 17, 1952, aged 87. Graduate of Wayne University College of Medicine, Detroit, Michigan, 1892. Licensed in California in 1903. Doctor Speer was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Sulzbacher, Carl I. Died in Los Angeles, October 21, 1952, aged 67. Graduate of the University Medical College of Kansas City, Missouri, 1899. Licensed in California in 1899. Doctor Sulzbacher was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

Truxaw, John W. Died in Anaheim, October 24, 1952, aged 69. Graduate of the University of California Medical School, Berkeley-San Francisco, 1911. Licensed in California in 1912. Doctor Truxaw was a member of the Orange County Medical Association, the California Medical Association, and the American Medical Association.

✣

Weaver, C. Hiram. Died in Los Angeles, October 7, 1952, aged 62, of coronary artery disease. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1912. Licensed in California in 1920. Doctor Weaver was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

White, John H. Died in Chico, October 22, 1952, aged 52. Graduate of the University of Oregon Medical School, Portland, 1926. Licensed in California in 1932. Doctor White was a member of the Butte-Glenn Medical Society, the California Medical Association, and the American Medical Association.

✣

Wright, William H. Died in Santa Monica, October 1, 1952, aged 43. Graduate of the University of Illinois College of Medicine, Chicago, 1938. Licensed in California in 1943. Doctor Wright was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Dr. Lawrence L. Craven of Glendale was awarded third prize in a contest sponsored by the Mississippi Valley Medical Society for a paper on the use of acetylsalicylic acid in continuous small doses in the treatment of patients who have recovered from an attack of coronary thrombosis and as a prophylactic measure for persons who might be subject to such an attack.

* * *

Dr. Ada L. Hatcher was named Inglewood's outstanding citizen of 1952 by a committee of judges representing various Inglewood civic and service clubs and received an award in token of the honor from the local post of the American Legion at an Armistice Day dinner.

Dr. Hatcher was chosen because "her contributions to the betterment of Inglewood have brought to the citizen greater opportunities for health and welfare."

* * *

Dr. Francisco Bravo has been appointed to the Los Angeles City Health Commission by Mayor Fletcher Bowron for a term ending July 1, 1957. Dr. Bravo succeeds the late Dr. C. Hiram Weaver on the commission.

* * *

Location of a $150.000 **cardiorespiratory laboratory** in the Hospital of the Good Samaritan by the University of Southern California School of Medicine was announced last month by the two institutions.

The laboratory was established by gifts from a group of businessmen and doctors. It will conduct scientific research into the causes and treatment of such chronic pulmonary diseases as bronchial and cardiac asthma, cancer and tuberculosis of the lungs, silicosis, and emphysema. Many of these diseases are connected with industrial hazards.

Research on the effect of "smog" on the human respiratory system is also planned by the laboratory.

MADERA

Recently elected officers of the Madera County Medical Society for 1953 are: President, Dr. Kenneth W. Butler; vice-president, Dr. Omar U. Need; secretary-treasurer, Herbert Weinberger. Dr. Butler replaces Dr. Smith A. Quimby, and Dr. Weinherger Dr. J. A. Bick.

SAN FRANCISCO

The San Francisco Heart Association is accepting **applications for research grants** to be allocated from the proceeds of the 1952 Heart Fund Campaign. Applications should be made to the Heart Association office, 604 Mission Street, as soon as possible.

The research committee of the San Francisco Heart Association consists of Dr. Arthur L. Bloomfield, chairman, and Doctors Jefferson Crismon, Harold K. Faber, Ernest Jawetz, Charles A. Noble, Jr., and Albert M. Snell.

* * *

Dr. Frederick C. Cordes of San Francisco will become president of the American Academy of Ophthalmology in January. He was elected president-elect at last year's meeting of the Academy.

* * *

Dr. Felix Cunha, San Francisco, was elected president of the National Gastroenterological Association at the recent annual meeting of the organization in New York.

* * *

An invitation has been extended to interested physicians to attend weekly meetings of the **Congenital Heart Study Group** of the University of California School of Medicine. At the meetings, which are held each Monday at 10 a.m. in Room 437 of the Clinic Building at the University of California Medical Center, all aspects of congenital heart disease are discussed by an interdepartmental panel from the faculty, and clinical problems are presented.

Physicians wishing to attend may have their names placed on the mailing list for announcements by communicating with the secretary of the Cardiovascular Board, MOntrose 4-3600, local 498.

* * *

Dr. C. Henry Kempe, assistant professor of pediatrics in the University of California School of Medicine, San Francisco, has been granted a leave during December and January to accept an invitation by the government of India and the World Health Organization.

Dr. Kempe will go to the King Institute at Madras, where he will conduct studies on serum treatment of smallpox in connection with research being carried on in the University of California School of Medicine.

SAN JOAQUIN

California Physicians Service recently opened a new office in the Bank of America Building in Stockton. Paul Humbert, district manager, is in charge of the office.

GENERAL

The first of eight sectional meetings scheduled for 1953 by the **American College of Surgeons** will be held January 19-21 in Cincinnati. A sectional meeting will be held in **Los Angeles,** March 30-31. The times and places of others scheduled are: Atlanta, February 23-24; Boston, March 2-5; Salt Lake City, March 20-21; Oklahoma City, March 24-25; Calgary, Alherta, April 23-24. The first Inter-American Session will he held in Sao Paulo, Brazil, February 9-12.

* * *

A certificate of award for excellence in graphic presentation was presented to **GP** by the American Institute of Graphic Arts which annually cites outstanding publications. Awards are made on the basis of judging by a board of six experts in the field of printing. Published by the **American Academy of General Practice,** *GP* has been widely recognized since its birth, less than three years ago, as outstandingly easy to read and unusually pleasing to the eye.

POSTGRADUATE EDUCATION NOTICES

UNIVERSITY OF CALIFORNIA AT LOS ANGELES SCHOOL OF MEDICINE

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

COLLEGE OF MEDICAL EVANGELISTS

Fourth Annual Chest Disease Symposium

Dates: January 22 and 23, 1953.

Fee: $25.00 (includes reception and dinner).

This course is open only to graduates of medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association. The fee for the course is $25.00, payable at the time of enrollment, either by check or money order made payable to the Regents of the University of California. (The Fourth Annual Chest Disease Symposium is presented through the cooperation of the Los Angeles County Tuberculosis and Health Association, the Los Angeles, California and American Trudeau Societies, and the American College of Chest Physicians and sponsored by the University of California at Los Angeles School of Medicine, University of Southern California School of Medicine and College of Medical Evangelists.)

PROGRAM

THURSDAY, JANUARY 22, 1953

MORNING SESSIONS

Moderator: Edward W. Hayes, M.D.

Registration.

9:00—Opening Announcements

9:05—The Physician's Use of the Laboratory in the Diagnosis of Pulmonary Infections—Chas. M. Carpenter, M.D.

9:35—Fundamental Aspects of Pulmonary Mycotic Diseases—Alvis E. Greer, M.D.

10:05—Recess

10:10—Control of Chronic Bronchopulmonary Suppuration—Marvin S. Harris, M.D.

10:40—Biomechanics and Management of Cough—Andrew L. Banyai, M.D.

11:10—Diagnostic Problems of Dust Inhalation Diseases —Edgar Mayer, M.D.

11:40—Panel Question Period

Luncheon Recess

AFTERNOON SESSIONS

Moderator: Elliot A. Rouff, M.D.

2:00—Clinical and Laboratory Diagnosis of Pulmonary Tuberculosis—Carl R. Howson, M.D.

2:30—Use and Abuse of Streptomycin, PAS and INH Compounds—H. Corwin Hinshaw, M.D.

3:00—Modern Management of Pulmonary Tuberculosis in Private Practice—Sidney J. Shipman, M.D.

3:30—Recess

3:35—Temporary Collapse Measures in Pulmonary Tuberculosis—Andrew L. Banyai, M.D.

4:05—Permanent Collapse and Resection in Pulmonary Tuberculosis—Brian B. Blades, M.D.

4:35—Panel Question Period

6:30—Reception and Dinner—Gold Room, Ambassador Hotel

9:00—X-ray Diagnostic Panel—Gold Room, Ambassador Hotel
Moderator: Marcy L. Sussman, M.D.
Drs. Andrew L. Banyai, Brian B. Blades, Alvis E. Greer, H. Corwin Hinshaw, Edgar Mayer, Sidney J. Shipman.

FRIDAY, JANUARY 23

MORNING SESSIONS

Moderator: Alfred Goldman, M.D.

9:00—Chest Pain as Seen by the Cardiologist—Edward C. Rosenow, Jr., M.D.

9:30—Diagnosis and Management of Right-Sided Heart Failure—George C. Griffith, M.D.

10:00—New Methods of Cardiovascular Diagnosis—Myron Prinzmetal, M.D.

10:30—Recess

10:35—Indications for and Results of Surgery for Congenital Heart Disease—William H. Muller, M.D.

11:05—Indications for and Results of Surgery for Acquired Heart Disease—John C. Jones, M.D.

11:35—Panel Question Period

Luncheon Recess

AFTERNOON SESSIONS

Moderator: David T. Proctor, M.D.

2:00—Practical Cardiopulmonary Functional Tests—Hurley L. Motley, M.D.

2:30—The Current Radiologic Examination of the Chest—Marcy L. Sussman, M.D.

3:00—Surgical Lesions of the Esophagus—Lyman A. Brewer, III, M.D.

3:35—Recess

3:40—Surgical Management of Thoracic Tumors—Brian B. Blades, M.D.

4:10—Palliative Treatment of Inoperable Bronchogenic Carcinoma—Edgar Mayer, M.D.

4:40—Panel Question Period

Contact: Applications or requests for information concerning this course should be made to: Thomas H. Sternberg, M.D., Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, California. Telephone: ARizona 7-4201 or BRadshaw 2-6192.

MEDICAL EXTENSION UNIVERSITY OF CALIFORNIA

Postgraduate Courses for 1953

Cardiovascular Diseases, February 2, 3, 4, 5, mornings. Fee $25.00. Medical Center.

Electrocardiography, February 2, 3, 4, 5, afternoons. Fee $25.00. Medical Center.

Pulmonary Function, February 6, 7, 8, all day. Fee $50.00. Medical Center.

Course for General Practitioners, March 2 through 6, Mount Zion Hospital, San Francisco. Fee to be announced.

Symposia on Psychosomatic Medicine, Wednesday afternoons and evenings, March 11, 18, 25. Fee to be announced. Langley Porter Clinic, San Francisco.

Diagnostic Radiology, April 6, 7, 8, at Franklin Hospital, San Francisco. Fee to be announced.

Pediatric Conference, June 22 through 26. Fee to be announced. Medical Center.

Conference on General Surgery, June 15 through 19. Fee $75.00. Medical Center.

Obstetrical and Gynecological Conference, September 2, 3, 4. Place and fee to be announced.

Ophthalmology (for specialists), September 14 through 19. Fee $75.00. Medical Center.

Medicine for General Practitioners, September through November. East Oakland Hospital. Fee $50.00.

Evening Lectures in Medicine, September through November. Fee $50.00. Mills Memorial Hospital, San Mateo (probably).

Contact: All inquiries to be addressed to Stacy R. Mettier, M.D., Professor of Medicine, Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

The Stanford University School of Medicine will offer the annual postgraduate conference in Clinical Ophthalmology from March 23 through 27, 1953. The program this year will be devoted to Ophthalmic Surgery.

Registration will be open to physicians who limit their practice to the treatment of diseases of the eye or eye, ear, nose and throat. In order to allow free discussion by members of the conference, registration will be limited to thirty physicians.

Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

Programs and further information may be obtained from the Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.

INFORMATION

Medical Care Prepayment Plans

In view of the extensive information it contains relative to problems confronting physicians in general and the California Medical Association in particular with regard to voluntary prepayment medical care plans, the following letter from Lewis A. Alesen, M.D., president of the California Medical Association, is herewith printed in full.

July 2, 1952

Mr. Kenneth Williamson
Vice-President and Executive Secretary
Health Information Foundation
420 Lexington Avenue, New York 17, N. Y.

Dear Mr. Williamson:

Replying to your letter of June 18, 1952, in which you have requested information concerning some of our current activities in voluntary prepayment plans, I must at the outset disclaim any position of authorship. but am most happy to summarize what has happened to date and to request others better qualified and informed than I to give you some of the technical details of the proposals.

About three years ago, when Dr. Ben Frees, 947 West Eighth Street, Los Angeles 14, was president of the Los Angeles County Medical Association, Mr. Eugene Robison, an insurance broker of 1325 Wilshire Boulevard, Los Angeles 17, and Mr. Gilbert Smith, an engineer and head of the Health Insurance Plan of the Southern California Gas Company, 810 South Flower Street, Los Angeles, developed and presented to a committee representing the Los Angeles County Medical Association and appointed by Dr. Frees their plan known as the California Medical Security Plan. The basic philosophy underlying this plan and the obvious sincerity and enthusiasm of Mr. Robison and Mr. Smith and their ready familiarity with the application of the insurance principles to the hazards of illness impressed very favorably a number of us who attended several of the meetings of the committee.

The Council of the Los Angeles County Medical Association recommended that Messrs. Robison and Smith appear before the Council of the California Medical Association, which was arranged. Following their presentation, a Special Insurance Committee of the California Medical Association under the chairmanship of Dr. Donald Lum of Oakland gave considerable thought to the California Medical Security Plan as well as to other prepayment proposals.

Dr. Lum's committee reported to the Council of the California Medical Association that it saw no reason why the Association as such should participate in arrangements of this kind. In general, it recommended against the establishment or the adoption of a fee schedule by groups of physicians, but indicated that such action on the part of individual physicians, if they so desired, would not constitute any violation of medical ethics or of the policy of the California Medical Association.

In this connection, it would be well to indicate that Legal Counsel Howard Hassard of the California Medical Association, and Dr. Louis Regan, legal counsel of the Los Angeles County Medical Association, have both rendered opinions informally that for a single physician or for a group of physicians to indicate a willingness to accept as full payment for services rendered policy beneficiaries a maximum schedule would not be open to attack by the Justice Department on the basis of violation of anti-trust laws. The position of the United States Supreme Court on May 1950, in which it was held that members of the U. S. Realty Board in Washington violated the Sherman Anti-Trust Act by agreeing to a minimum fee schedule deals, in the opinion of our counsel, with entirely different circumstances. The proposal to accept a maximum benefit beyond which fees will not be charged could not be construed as against the public interest.

You are of course familiar with the Tennessee Plan in which the State Medical Association did approve a fee schedule offered by the underwriting companies and did agree to police its membership in the acceptance of those fees in exchange for services rendered. The Tennessee fee schedule is in my opinion far too low to be realistic, and so far as the California Medical Association is concerned, it would not wish to participate in any attempt to force its membership to comply with any fee schedule.

I should like to offer a few comments which are to be understood as entirely my own opinion and in no manner reflecting the official views of the California Medical Association or of any other groups or individuals. Much as we physicians dislike a fee schedule, it must seem quite obvious that a fee schedule of some kind is essential if insurance companies are to underwrite the costs of medical care. Otherwise, there would be no basis for the computation of premiums. It must be equally obvious that a fixed and rigid fee schedule could not serve equitably in different parts of a large state, and certainly not throughout the country as a whole. Some physicians feel that the interposition of a third party, such as those in the California Medical Security Plan, between them and the insurance company, and at times between them and the patient, would involve a surrender of part of their control over the practice of medicine, and would therefore be undesirable. They further fear that once an insurance company or several insurance companies have secured a reasonably large panel of physicians who have indicated their willingness to participate and to follow a fixed schedule, there might arise under conditions of economic pressure a tendency on the part of the insurance companies arbitrarily to reduce the fees and to seek physicians who would be willing to work at the lower schedule.

As a bit of background, it would seem in order to outline the underlying philosophy as developed by Messrs. Robison and Smith, because in every discussion on the voluntary prepayment of the costs of medical care, sooner or later the basic issues of service or indemnification and the adoption of a fee schedule become the paramount consideration. Mr. Smith has had long experience dealing with labor and is in a position to reflect its views. The contention is that labor wants security in its health prepayment plan, that it is dissatisfied with indemnity schedules as they are now operated because a certain percentage of physicians, variously estimated at from 4 to 8 per cent, still continue to make overcharges out of proportion to the patient's ability to pay, and often altogether unjustifiably. This fact causes labor to lose confidence in any type of indemnity program and to insist upon full coverage or a service type of contract.

The main theme of the California Medical Security Plan is that there is adequate money available which can be collected from employer and employee to pay good fees for medical services to employees and dependents; that labor is not particularly concerned about the cost of such plans, and it is perfectly willing and even insistent that good service be well recompensed. Labor merely wishes a guarantee, once a schedule is adopted, that that schedule shall be complete in its coverage and that there will be no overcharges.

To insure such a goal, the California Medical Security Plan proposes an intermediary organization in the form of a non-profit corporation, the purpose of which shall be to set standards of fees and professional excellence and to appraise such plans and policies in the terms of such standards. Having decided that a given policy offered by an insurance company meets these standards, it would issue such approval and the company would be authorized to sell the policy and advertise that approval. On the part of the physicians agreeing to perform services under the California Medical Security Plan this agreement would involve a promise to accept as full payment the indemnification paid in accordance with the fee schedule. An important consideration is that this fee schedule would be set high enough to give if anything a greater return from the patients in the class under consideration than the average physician would expect to receive working independent of any insurance plan.

The California Medical Security Plan governing board would be composed largely of members of the California Medical Association together with representatives of labor and of the public, with the understanding that control would at all times be vested in the medical profession. The original fee schedules as submitted by Messrs. Robison and Smith contemplated only provisions for surgical and hospital care, which they estimated could be provided for about two per cent, that is, one per cent payroll deduction from the employee and one per cent paid by the employer. They further estimate that a good fee schedule covering medical services could be provided by an additional one per cent.

As a further development in this thinking, Mr. Robison has prepared a schedule of indemnification based on the deductible or co-insurance principle in which the employee agrees to pay the first twenty-five, fifty or one hundred dollars of any illness, the variation in deductible amounts being represented respectively by differences in the premium payment involved. I have requested Messrs. Robison, Smith, and C. E. Tookey, vice-president and actuary, Occidental Life Insurance Company, to write you more fully concerning the details of their proposals. Particularly interesting in this connection is the experience in Long Beach with the Procter and Gamble employees. In that instance, the physicians of Long Beach did not sign any formal agreement but by common consent did agree to abide by the schedule as developed in the prepayment plan. This was a good schedule with which the physicians were well satisfied. However, because it was a good schedule, because the physicians did give good service and were happy with it, the employees abused it and overused it, since there was no element of co-insurance, no requirement that the first visit or two should be paid by the patient, and consequently the company had to drop the plan at the expiration of some 18 months because of losses incurred.

At the most recent meeting of some of those interested in this subject here in Los Angeles, called by Mr. Tookey, at which were present representatives of the Pacific Mutual Life Insurance Company and other insurers as well as physicians, I made a suggestion which I believe warrants thorough consideration. Since California Physicians' Service is controlled by the physicians of this state, its fee schedule is changed by the Board of Trustees of that organization only after thorough research by and recommendation of a fee schedule committee appointed by the California Medical Association. The recommendations of this committee are not always followed in toto by the Board of Directors of the California Physicians' Service, but they do ultimately have considerable influence in those decisions as taken by the board. I believe that one important legitimate function of a physician-sponsored plan is to exercise a measure of control of standards of medical care and over fees for those services by offering a satisfactory and acceptable product in open competition with other plans on the open market. Pursuing this line of thought, it was suggested that C.P.S. through its Board of Directors be encouraged to adopt a good high realistic fee schedule representing fees which the average physician throughout the state in all fields of practice would recognize as being an eminently fair return for services rendered 95 per cent of his patients. Such a schedule would admittedly be much higher than the one now in use. Payments on such a schedule could obviously not be anywhere near 100 per cent of face value, perhaps not more than 50 per cent under present premium charges, but inasmuch as there is a tendency for the C.P.S. schedule to be quoted in litigation and on other occasions as a schedule satisfactory to the members of the California Medical Association, the wisdom of making that schedule honestly acceptable to most of our membership is apparent. It was further suggested to the insurance men that, given such a realistic schedule on the part of C.P.S. as a backdrop, there should be no difficulty experienced on the acceptance by most if not all of the practitioners of a similar schedule of payment when written on an indemnification basis by private carriers. It was also suggested that the private companies might write their policies in such a way as to provide for indemnification of the same percentage of this schedule as provided by C.P.S.; or, to introduce an element of competition, it might quite well be that they could pay a higher percentage because of larger coverage and more efficient performance. This would be an important competitive factor acting in favor of the beneficiary.

It is also my opinion that physicians, themselves, once convinced that a given insurance plan would in fact give them returns as good as if not better than they could receive under their private practice, would be willing to cooperate provided the paper work were reduced to a minimum, and they would also jealously guard such a plan from abuse from the small percentage of chiselers who would of course be expected to emerge. This force of moral suasion would, in my opinion, be stronger than any contract which could be written.

Ideally, in my opinion, a prepayment plan should place some responsibility upon the beneficiary as a co-insurer. This could best be represented by the deductible type of plan as now outlined by Mr. Robison and as also written by at least one American and one British company. To be sure, this does not meet with labor's dictum of complete coverage, but I believe labor's opinion could be altered provided we marshalled the reasons for this attitude with sufficient clarity and force.

Yours sincerely,

L. A. Alesen, M.D.

THE PHYSICIAN'S *Bookshelf*

A TEXTBOOK OF PHARMACOLOGY—Principles and Application of Pharmacology to the Practice of Medicine—William T. Salter, M.D., Professor of Pharmacology, Yale University School of Medicine. W. B. Saunders Company, Philadelphia, 1952. 1240 pages, 284 figures, $15.00.

Unfortunately Dr. Salter died just after his monumental work appeared, and so criticism loses its most worthwhile aspect, that of suggesting improvements to the author. Dr. Salter's earlier training as a clinician led him into this attempt to correlate pharmacology and therapeutics in a way not ordinarily presented in textbooks of pharmacology. This was an ambitious goal, and must be commended, even though somewhat imperfect in its fruition.

The book has been divided into four large parts. Each of the parts has been subdivided into sections which are then broken down into chapters on related subjects. Part One is primarily a 33-page introduction to the study of pharmacology; Part Four is a short 12-page section on clinical toxicology. The remaining 1150 pages are taken up by Part Two: *Drug Actions on Physiological Mechanisms;* and by Part Three: *The Application of Drugs in Clinical Medicine.* Thus it is apparent that the major emphasis of this book is placed on the use of drugs in the treatment of pathological states, and that pharmacology is discussed as it relates to these particular situations. As a result, a loose continuity of subjects is achieved. Many drugs are discussed briefly at many points as they relate to the particular diseases, but no comprehensive description is given in any one chapter. Therefore, if one desires complete information on any major drug, he must rely on the index, and pick this up piecemeal.

This means of presentation will make the book somewhat difficult to use as a text for sophomore students who have most of their knowledge in medicine and pathology yet to come. For the clinician, however, the book may prove to be considerably more useful. There is some deficit of exact therapeutic procedures, such as doses and time intervals, which the clinician always finds useful. The section on endocrine glands as they relate to pharmacology is particularly comprehensive and well written.

Thus, like most books, this new pharmacology has both strong and weak points, but it is a welcome addition to the pharmacological repertory. In particular, the poetical embellishments and aphorisms are pleasing to the eye and ear.

* * *

POISONING—A Guide to Clinical Diagnosis and Treatment—W. F. von Oettingen, M.D., Ph.D., National Institutes of Health, U. S. Public Health Service, Federal Security Agency, Bethesda, Maryland. Paul B. Hoeber, Inc., New York, 1952. 524 pages, $10.00.

Dr. von Oettingen probably represents modern toxicology more than anyone else in America and we are indeed fortunate that he has reviewed the field with such detail and skill. His book is quite unique among toxicology texts in containing more than the usual listing of poisonings with their signs, symptoms and treatments. This traditional section, to be sure, is the largest in the book, but is preceded by a long portion devoted to diagnosis and differential diagnosis. It is this extensive diagnostic part which represents new ground in a text. Each bodily system is considered separately by symptom, for instance, hyperthermia and perspiration are considered differentially under the general systemic heading of changes notable on inspection, and euphoria and twitchings of the muscles under the nervous system. Of particular value are the descriptions of relevant laboratory tests, and their biochemical interpretations.

With the continuous introduction of new synthetics, the field of toxicology cannot help but grow, and it is to be hoped that the book may be revised accordingly. One addition which the reviewer would have found helpful would have been a greater incorporation of popular names, either as a separate list, or by inclusion in the index, with reference to the proper section which would then include the synonyms. Thus, mushrooms were hard to find, although Amanita were there if one remembered this name, and while one looked in vain for trembles, or milk sickness, Apolopappus was the key word.

Two other minor points bear thought. First, although the section on differential diagnosis is an excellent concordance of knowledge, in most cases of poisoning the suspect agent is obvious and the differential relatively unimportant. The second point concerns the details of treatment. These are quite abbreviated and might be usefully expanded in the future.

* * *

MASSAGE AND REMEDIAL EXERCISES—In Medical and Surgical Conditions—9th Edition—Noel M. Tidy, Member of the Chartered Society of Physiotherapy; T.M.M.G., The Williams and Wilkins Company, Baltimore, 1952. 519 pages, $6.00.

This book is intended for British students of physical therapy. Almost every possible orthopedic and neurological condition plus many medical and gynecologic conditions are listed with briefs of the pathology and symptomatology followed by treatment with emphasis on physical treatment, if any. This physical treatment emphasizes specific types of massage and specific remedial exercises for each entity.

In the United States, the efficacy of massage as a major treatment for pathological conditions is much doubted and is used much less frequently than in Europe. Instead emphasis has been placed more on heat and in recent years even more on exercises. Heat is not discussed in this book; the exercises given are mainly of the calisthenic type with very little mention of strength-building or resistance type. There are too few illustrations, and the descriptions of exercises too glib for easy understanding and practical application. The book does point up the fact that physical treatment is applicable to almost all neurological and orthopedic conditions, and can produce much improvement if used intelligently, and prescribed accurately.

This book is not to be recommended to physicians and is of limited value to physical therapists.

METHODS IN MEDICAL RESEARCH—Volume 5—A. C. Corcoran, Editor-in-Chief. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1952. 394 pages, $7.50.

This most recent volume in a series devoted to descriptions of methods used in medical research contains three sections. The first, edited by Lyman C. Craig, is concerned with "Methods for Separation of Complex Mixtures and Higher Molecular Weight Substances" (countercurrent distribution, paper chromatography, electrophoresis and ultracentrifugation). The third section, edited by Melvin Cohn, describes "Immunochemical Methods for Determining Homogeneity of Proteins and Polysaccharides" (experimental production and separation of antibody-active proteins from sera, quantitative precipitin reactions, etc.).

The second and longest section (A. C. Corcoran, editor) discusses "Methods of Renal Study." In this, the emphasis is properly placed on subjects with but little immediate clinical application: for example, methods for determining rates of excretion of protein and formed elements in the urine are not mentioned, and only a few pages are given to practical methods of "renal function" determination. Aimed at the clinical and laboratory investigator, there are chapters on renal blood flow, water and electrolyte metabolism, bioassay of antidiuretic substances, in vitro studies of renal tubular excretion, electron microscopy, and much material relating to the production of hypertension and renal lesions in the rat together with measurement of arterial pressure and renal function in this animal.

As was the case with earlier volumes, the present one is thorough-going in details and critical if not always encyclopedic. It is recommended to those interested in such topics as were cited above; as the editor modestly hopes, it "will find its place in laboratories rather than libraries," but the latter should also find room for it.

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THE OLD EGYPTIAN MEDICAL PAPYRI—Chauncey D. Leake, Vice-President, University of Texas, Medical Branch, Galveston. University of Kansas Press, Lawrence, Kansas, 1952. 108 pages, $2.00.

Dr. Leake, well known as medical historian and litterateur, presents in pleasant format an interesting description of the Egyptian medical papyri with special reference to the Hearst papyrus which he himself has studied. When one comes to the actual contents of the document Dr. Leake finds that Egyptian therapy was "empirically rational." The reviewer finds it difficult, however, to read much that is intelligent medically into all this, and while the contribution of these ancient documents to the history of civilization is invaluable it is the historian rather than the doctor who will profit from their study.

* * *

ELECTROTHERAPY AND ACTINOTHERAPY — A Textbook for Student Physiotherapists—2nd Edition—E. B. Clayton, M.B., B.Ch. (Cantab.), Consulting Physician to the Physical Treatment Department, Kings College Hospital, London. Bailliere, Tindall and Cox, London (released through Williams and Wilkins Company, Baltimore), 1952. 452 pages, $4.00.

As the title states, this is a textbook for British physical therapy students on electrotherapy which includes diathermy and various electrical currents for muscle stimulation and on actinotherapy which includes infrared and ultraviolet radiations. The exposition is done poorly and with too much emphasis on elementary physics and too little on its application to therapeutic modalities. There are no illustrations and the description of methods is too pithy to be useful.

This book is of no value to physicians and is a poor textbook for students of physical therapy.

ESSENTIALS OF PUBLIC HEALTH—2nd Edition — William P. Shepard, B.S., M.D., M.A., Third Vice-President, Health and Welfare Division, Metropolitan Life Insurance Company, Clinical Professor of Public Health and Preventive Medicine, Stanford University School of Medicine; Charles Edward Smith, M.D., D.P.H., Dean School of Public Health, University of California, President, California State Board of Health; Rodney Rau Beard, M.D., M.P.H., Executive and Professor of Public Health and Preventive Medicine, Stanford University School of Medicine; and Leon Benedict Reynolds, A.B., Sc.D., Professor of Hydraulic and Sanitary Engineering, Stanford University. J. B. Lippincott Company, Philadelphia, 1952. 581 pages, $6.50.

"The question has been raised," Dr. Shepard and his collaborators write, "as to how much of the high military rejection rate is a medical responsibility. This is a little like asking who spilled the milk. Our concern is, not whose fault it is, but what can be done to prevent its future recurrence. It matters little whether the blame be placed on parents, schools, public health agencies, physicians or youth themselves. Here is a national problem of first magnitude. None can deny that medical advice and leadership must play a large part in its solution."

Dr. Shepard, a vice-president of the Metropolitan Life Insurance Company, who recently served as president of the American Public Health Association, and who is best known for his efforts to fuse the energies of private physicians, health agencies, and other responsible civic and business groups working for improved community health, himself exemplifies the private practitioner who has given his professional life to effective "advice and leadership."

His book brings together for all private physicians a multitude of facts and statistics, all revised for the 1952 edition, to serve as a reference handbook on such subjects as environmental sanitation (water, foods, and sewage), communicable disease control, school health services, health education, industrial health, statistics, and public health nursing. It defines and explains public health operations and the preventive medical program.

The book provides ready answers to quarantine procedures. It has an excellent catalogue of common industrial poisons. It lists the important infectious diseases, describing them and their countermeasures. One long table describes the collection and interpretation of laboratory specimens of the diseases.

These days, when the private physician has come into the public eye in a political way, albeit through no doing of his own, it is increasingly necessary that he know all that is possible about the important and successful functions of his public health agencies and their related groups. He should know their objectives and methods, and how essential his own work is to his community, and what procedures are set in motion by his communications to his public health agencies for the good of all.

The book is the result of considerable intelligent thinking. It will answer many questions. It will explain many arguments. It should be read by every physician.

* * *

CULDOSCOPY—A New Technic in Gynecologic and Obstetric Diagnosis—Albert Decker, M.D., D.O.G., F.A.C.S., Clinical Professor of Gynecology and Obstetrics, New York Polyclinic Medical School and Hospital. W. B. Saunders Company, Philadelphia, 1952. 148 pages with 50 figures, $3.50.

This monograph by Dr. Decker represents the first attempt by the author of the procedure to group together in a single volume all that is available in the current literature concerning the newest method of visualization of the female pelvis. Culdoscopy is a new diagnostic technic unknown to many physicians, and the author has therefore set forth in clear and understandable language the details of culdoscopic examination of the pelvis so that one previously unfamiliar with the procedure may be left with a working knowledge of the technic.

The book opens with the history of pelvic visualization, and such related subjects as diagnostic pneumoperitoneum with utilization of the knee-chest position and the diagnostic and therapeutic uses of posterior colpotomy are included. Value of the instrument in ectopic pregnancy, endometriosis, and infertility problems is discussed at length. Especially interesting is the section regarding its use in infertility problems which stresses diagnosis by direct visualization of minor pelvic pathology which interferes with tubal and ovarian function and the advantages of the determination of tubal patency or block under direct vision. The last portion of the book is devoted to case histories illustrating clinical application of the method.

Those who have gained experience with the culdoscope are enthusiastic about its use and agree with TeLinde, who states in the foreword at the beginning of the book that it does not appear to be "just another gadget, but a most effective gynecologic diagnostic instrument." A knowledge of the instrument seems desirable for all who encounter problems in gynecologic diagnosis, and the price of the book is low enough to encourage its widespread distribution to the profession.

* * *

THE HUMAN PELVIS—Carl C. Francis, A.B., M.D., Assistant Professor of Anatomy, Department of Anatomy, Western Reserve University, Cleveland, Ohio. The C. V. Mosby Company, 1952. 210 pages, $5.00.

This slender volume was written by an anatomist to serve as a text for a course in applied anatomy for surgical residents and practicing surgeons. It describes quite briefly not only the bones, muscles, vessels and nerves of the pelvis, but deals also with the pelvic portions of the intestinal and urinary tracts, and with the genitalia, both male and female. The final chapter is a very condensed summary of the embryological development of the rectum, urinary tract, and genitalia. There are sixty-one illustrations in black and white, some original, many borrowed from other textbooks, none particularly outstanding. As one might anticipate, a guide book of this sort offers nothing new, and most of the text is so brief that the volume would be useful only for reviewing the highlights of pelvic architecture. In this respect the book undoubtedly will be of aid to those particular students for whom it was designed. For others it appears not to be a worthwhile investment.

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FUNDAMENTALS OF PSYCHIATRY—5th Edition—Edward A. Strecker, M.D., Sc.D., LL.D., Litt.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, University of Pennsylvania Undergraduate and Graduate Schools of Medicine. J. B. Lippincott Company, Philadelphia, 1952. 237 pages, 21 illustrations, $4.50.

This is the fifth edition of a very popular text "dedicated to the ever increasing number of medical students, internes, residents and practitioners in all the areas of medicine who, wishing to be complete physicians, realize that man is unified and total in his functioning . . ." The author emphasizes the need for an increased number of psychiatrists; that one of every twelve school children will need psychiatric attention in adult life; that more than one million are destined to become patients in mental hospitals; and that emotional immaturity can be more destructive than an "H" bomb. Following the brief introduction concerning the historical background of psychiatry, its relationship to other specialties in medicine, and the development of the concept of psychosomatic medicine, the etiological factors, predisposing and exciting causes, both physical and psychological, of mental illnesses are described. Considerable attention is given to the classification of various kinds of mental illnesses. The details of the psychiatric examination are described, including procedures to follow in a mental examination. Definitions of psychiatric terms are presented in a simple, uncomplicated manner and illustrated by many clinical examples. The "organic" and "functional" psychoses, the psychoneuroses, and the defective reaction types (mental deficiency—a term which the author does not like) are delineated and illustrated by short case reports and a series of lucid diagrams. Treatment of various kinds, including the drastic therapies (insulin shock, electroshock, prefrontal leukotomy), psychotherapy, "support therapy," and group therapy are all briefly considered. Special chapters on war psychiatry and psychiatric nursing are presented and a glossary defining commonly used psychiatric words concludes the volume.

For the student and beginner, this volume is a clear, succinct account of present-day psychiatry.

* * *

BACITRACIN—A Review and Digest of the Literature Up to and Including January, 1952. Research Division, S. B. Penick & Company, 50 Church Street, New York, 1952. 127 pages.

This book is a tract designed to promote bacitracin. It underplays the serious toxic actions of this agent and overplays its potential value in therapy. Preparations of bacitracin for local application to the skin are extremely valuable but are dismissed in this volume in a few pages. Rare cases require systemic administration of this agent and all the rest of the book is essentially devoted to this aspect of the subject. The physician who wishes to treat a patient in this way may wish to refer to the extensive bibliography contained in this book but he would be well advised to avoid the text.

* * *

THE CLINICAL USE OF FLUID AND ELECTROLYTE—John H. Bland, M.D., Assistant Professor of Medicine, University of Vermont College of Medicine. W. B. Saunders Company, Philadelphia, 1952. 259 pages, $6.50.

Following a general review of body water and electrolytes under normal conditions, the author has described the recognition and treatment of their abnormalities such as are associated with congestive heart failure and its management, renal diseases, diabetes mellitus, surgical operations, shock, other forms of stress, etc. Special attention is given to the particular problems of both very young and aged patients.

Although its physical appearance is unattractive, the book succeeds in presenting large amounts of useful information. Perhaps it is the lack of an index which nullifies attempts to find material on the use of hormones in the treatment of the nephrotic syndrome or on the disturbances associated with chronic hepatitis and ascites, and perhaps some might disagree with a few statements.

These, however, are minor criticisms. The monograph is clearly useful both to students of medicine and to practitioners.

* * *

THE KNEE AND RELATED STRUCTURES—Injuries, Deformities, Diseases and Disabilities—Philip Lewin, M.D., F.A.C.S., F.I.C.S., Professor and Chairman of Bone and Joint Surgery, Northwestern University Medical School. Lea and Febiger, Philadelphia, 1952. 914 pages, 333 figures, and 2 colored plates, $16.00.

This particular volume is a much better organized and presentable work than a similar volume published by the same author on the ankle. In general, it follows the same format as the previous book on the ankle, but it has covered the world literature and thinking with regard to knee joint injury and disease much more generally, and as a consequence becomes probably the best book on knee joint injury and disease that has been published in the American literature.

The book is most comprehensive. It requires the judgment of the experienced surgeon to comprehend its entirety. It is amazing that this much information can be formulated and written about a single weight-bearing joint but the complexity and extent of diagnostic acumen that may be necessary to determine the course of treatment in any given knee joint derangement, requires a book of this type for reference. Certain portions of this book may appear redundant, but the impression remains that ninety per cent or more of the book is basically sound and worth while.

For the average surgeon the book is a bit too complex. For the orthopedic or traumatic surgeon with qualified experience and training, it is an excellent reference book.

I would feel that the book is of extreme value to the student of orthopedic surgery and to the experienced orthopedic surgeon. It is a valuable reference, but not a necessity to the surgeon who is interested in trauma alone. It is a most complete and the most valuable reference book regarding the orthopedic concept of one of the major weight-bearing extremity joints in the body, one of the most misunderstood joints of the body.

* * *

CLINICAL PROGRESS IN CARDIOVASCULAR DISEASE—Edited by Herrman L. Blumgart, M.D., Physician-in-Chief, Beth Israel Hospital and Professor of Medicine, Harvard Medical School. Modern Medical Monographs, No. 2, Grune & Stratton, New York, 1952. 143 pages, $4.50.

As stated in the introduction, the material in this volume was selected from the monthly section "Clinical Progress" of the journal *Circulation*. The miscellaneous contents and references to their original publication in identical form are as follows:

E. V. Allen, L. N. Katz, A. Keys, and J. W. Gofman et al: "Atherosclerosis. A Symposium." *Circulation*, 5:98-134, January 1952.

C. E. de la Chapelle and O. A. Rose: "The Management of Acute Cardiac Emergencies." *Circulation*, 4:764-774, November 1951.

E. F. Bland: "Surgery for Mitral Stenosis. A Review of Progress." *Circulation*, 5:290-299, February 1952.

A. C. Ernstene: "The Management of Cardiac Patients in Relation to Surgery." *Circulation*, 4:430-436, September 1951.

M. D. Altschule: "Emotion and the Circulation." *Circulation*, 3:444-454, March 1951.

These particular papers were chosen for reprinting "because they are pertinent to significant problems of current interest and because of their practical usefulness." This reviewer has no quarrel with the selection or with the high quality of the essays individually, but wonders whether their republication is truly useful or necessary.

* * *

PRACTICAL CHIROPODY—8th Edition—E. G. V. Runting, F.Ch.S., Founder and First President of the Incorporated Society of Chiropodists. J. B. Lippincott Company, Philadelphia, 1951. 155 pages, $3.00.

This handbook covers well common foot disorders and outlines practical points in the treatment of these sometimes vexing conditions. This book would be useful to the general practitioner or those in other fields who are confronted with minor foot problems.

THE PATHOGENESIS AND TREATMENT OF THROMBOSIS—With a Clinical Laboratory Guide to Anticoagulant Therapy—Irving S. Wright, M.D., Professor of Clinical Medicine, Cornell University Medical College. Modern Medical Monographs, No. 1, Grune & Stratton, New York, 1952. 78 pages, $3.00.

This small monograph excellently reviews what is known of the fundamental reasons for thrombotic disease and the arguments in favor of therapy with anticoagulants. But for the addition of a short section on Treburon, an index and an appendix designed as a clinical and laboratory guide to anticoagulant therapy, the material appeared in identical form in the journal *Circulation*, 5:161-188, February 1952.

* * *

MANAGEMENT OF THE NEWBORN—Arthur Hawley Parmelee, M.D., Professor of Pediatrics, University of Southern California School of Medicine. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1952. 358 pages, $7.00.

Dr. Parmelee, in a very readable style, has presented the embryological, anatomic, physiological, and biochemical peculiarities of the infant at birth, which are essential to a proper evaluation of the infant's reaction to extra-uterine life. The chief factors influencing either success or failure in a transition from the intra-uterine to the extra-uterine life are the major subjects of this very practical monograph on the newborn infant. Attention is focused on this age group in an effort to find the causes of problems and methods of prevention. Throughout the book, Dr. Parmelee draws on his own clinical experience to tell simply and effectively how to meet both the usual and the unexpected problems arising in the care of the newborn. Attention is called to the joint medical responsibility of the obstetrician and the pediatrician for the welfare of the newborn.

A chapter on the Care and Management of the Newborn is largely directed toward hospital care and includes care immediately after birth, nutritional needs of the infant, temperature regulation and need for body comfort with protection against infection and trauma. A helpful evaluation of rooming-in versus the large nursery type of care is presented. Special measures for the care of the premature receiving attention are: incubator care, body temperature regulation, nutritional needs, recognition of retrolental fibroplasia with a discussion of its possible causes, and an evaluation of new methods of resuscitation. An interesting comparison of the degree of physiological maturity between the premature and the full term infant is helpful in interpreting the outlined programs for care of the premature.

Emphasis is also placed on the disturbances due to acquired infections and other postnatal infections, pointing out that for the most part these are, or should be, controllable. Infections of the skin, ears, nose, respiratory tract and gastrointestinal tract are discussed with preventive and therapeutic regimens suggested. A program for controlling epidemic diarrhea of the newborn is set forth. Intelligent and individual supervision of the newborn infant by the physician in charge, it is stated, is the only way this can be avoided.

Dr. Parmelee has presented a general picture of the possible difficulties faced by every newborn, and their implications, so that one is better able to make an intelligent evaluation of the individual under consideration. Familiarity with the normal, the author feels, is the surest way of recognizing the abnormal and evaluating the severity of the abnormality. This clinical manual is freely illustrated with excellent photographs demonstrating the normal and abnormal physical findings seen in the newborn.

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(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor.

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